

Annual sanitary report of the Province of Assam.

Contributors

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ANNUAL PUBLIC HEALTH REPORT

OF THE

PROVINCE OF ASSAM

FOR THE YEAR

1930

BY

LIEUT.-COLONEL T. D. MURISON, D.P.H., I.M.S.,
DIRECTOR OF PUBLIC HEALTH, ASSAM



SHILLONG

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FROM

LIEUT.-COLONEL T. D. MURISON, D.P.H., I.M.S.,

DIRECTOR OF PUBLIC HEALTH, ASSAM,

TO

THE SECRETARY TO THE GOVERNMENT OF ASSAM
IN THE TRANSFERRED DEPARTMENTS.

Shillong, the 11th July 1931.

SIR,

I HAVE the honour to submit herewith the Annual Public Health Report of the province of Assam for the year 1930.

Your obedient servant,

T. D. MURISON, *Lieut.-Colonel, I.M.S.,*
Director of Public Health, Assam.

Enclosures :—

1 report.

7 charts.

20 statements.

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[Maximum limit of narrative portion of the report, 30 pages.]

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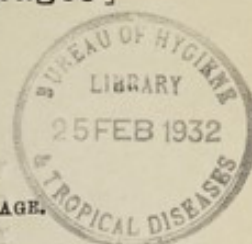
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ANNUAL PUBLIC HEALTH REPORT

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FOR THE YEAR

1930.

SECTION I.

METEOROLOGY.

The Meteorologist, Calcutta, has furnished the following note on the chief meteorological conditions of the province for the year 1930:—

The cold weather period—January and February.—The western disturbances which affected this province in January were on the whole more active than usual and produced rainfall which was 18 per cent. in excess. The activity however, decreased during the succeeding months and rainfall was 12 per cent. in defect. Both maximum and minimum temperatures were in slight defect in January, while in February the maximum was in slight excess. Cloud amount was in slight excess in January.

The hot weather period—March to May.—Four western disturbances passed over the Province in the month of March causing three spells of wet weather. The first gave widespread rain between the 8th and 10th, while only occasional thundershowers occurred in connection with the second. The third and fourth disturbances were responsible for local rain on the 27th and nearly general rain till the end of the month respectively. The total rainfall for the month was normal. Two western disturbances entered the Province in April causing widespread rain between the 5th and 7th, and on the 9th respectively. Rainfall in the month of May was practically confined to the 5th and 6th, and was in moderate defect. Maximum temperature was in slight defect in March, and in slight excess in May. Cloud amount was more than usual in March.

The monsoon period—June to September.—The Bay monsoon extended into the province, on the 1st June. It strengthened between the 7th and 8th and was normally active during the rest of the month. Rainfall in June was in moderate to large excess. The monsoon then weakened and continued less active than usual till the last week of July when it again revived. Rainfall during the month of July was consequently in moderate defect. The monsoon remained active during the next month and gave nearly the normal amount of rainfall. Some of the noteworthy falls were Cherrapunji 12" on the 28th and 18.7" on the 29th. The rainfall of September was on the whole equal to the average although there were appreciable variations in the activity of the monsoon during the months. The mean maximum temperature was below normal in June and above it in July. Cloud amount was in slight excess in June.

The retreating monsoon period—October to December.—The month of October began with widespread thunder rain and the conditions persisted during the following day. Rainfall decreased, but scattered and intermittent showers fell up to the 20th. On the whole the rainfall of the month was in slight excess. The month of November was characterised by two spells of wet weather, on the 3rd and 4th, and from the 19th to 21st. The first was in connection with an Arabian Sea storm which forming on the 27th October, passing inland near Surat on the succeeding day, and moving north-easterly caused widespread light to moderate rain over the whole of the Province. The second wet period was associated with a storm which formed in the Bay on the 17th, crossed the coast near Masulipatam on the 18th and then gradually changing its direction of motion finally disappeared over Assam on the 22nd. The rainfall over the Province during the second spell was heavy and widespread. The total

rainfall in the month was more than four times the normal. Rainfall in December was in slight defect. In keeping with the excess of rainfall, cloud amount was more than usual in November. Maximum temperature was in slight defect in October and November. Minimum temperature was in slight defect in October and in slight excess in November.

The average price of common rice in plains districts varied from 9 $\frac{3}{8}$ seers to the rupee in Nowgong to 6 $\frac{5}{8}$ seers in Lakhimpur. Rice was sold at a lower price than in the previous year in all districts, except Sibsagar.

The provincial birth-rate rose from 30·36, decennial average to 31·35 in 1930. The provincial death-rate fell from 24·19, decennial average to 21·40 in 1930.

SECTION II.

BRITISH ARMY.

(No remarks.)

SECTION III.

INDIAN ARMY.

(No remarks.)

SECTION IV.

JAILS.

(No remarks.)

SECTION V.

GENERAL POPULATION.

Vital Statistics.

2. The report deals with the plains districts of the province, the population of which, according to the Census of 1921, was 6,852,242. As the final figures of the 1931 Census are not yet to hand, the ratios in the report have been worked out on the Census population of 1921. The provisional population of the plains districts, as ascertained by the Census of 1931, is 7,910,457 or 1,058,215 over the Census population of 1921. This shows an increase of 15·44 per cent. in the population. The Census of 1931 reveals an increase in certain of the Assam Valley districts which will affect the birth and death ratios. The greatest increases were in the districts of Nowgong (40·9) and Kamrup (27·4).

Registration in those areas of the hill districts in which it is recorded is shown separately in paragraph 10 of this report.

The birth-rate of the province during the year 1930 was 31·35 per mille of population and is compared below with the ratios recorded in other provinces in India :—

| Provinces. | Birth-rate. | | |
|-------------------------------------|-------------|-------|-------|
| | 1924-28. | 1929. | 1930. |
| 1 | 2 | 3 | 4 |
| Assam | 30·49 | 32·77 | 31·35 |
| Bengal | 28·74 | 29·26 | 26·60 |
| Bihar and Orissa | 36·9* | 35·6 | 36·2 |
| Central Provinces | 45·20* | 43·96 | 47·74 |
| Madras | 35·2 | 37·9 | 39·83 |
| Burma | 26·26 | 26·43 | 28·87 |
| Bombay | 36·46 | 38·18 | 37·41 |
| United Provinces | 35·32 | 34·33 | 37·31 |
| Punjab | 42·1 | 44·45 | 43·26 |
| North-West Frontier Province | 29·2 | 30·82 | 25·60 |

* Average for 1925-29.

The birth-rate of Assam was higher than that of the provinces of Bengal, Burma, North-West Frontier Province but lower than the other provinces.

The death-rate of the province for the year 1930 was 21.40 per mille of population and is compared below with the rates recorded in other provinces in India :—

| Provinces. | Death-rate. | | |
|-------------------------------------|-------------|-------|-------|
| | 1924-28. | 1929. | 1930. |
| 1 | 2 | 3 | 4 |
| Assam | 23.70 | 20.91 | 21.04 |
| Bengal | 25.32 | 23.52 | 22.44 |
| Bihar and Orissa | 25.4* | 26.9 | 29.6 |
| Central Provinces | 32.14* | 31.13 | 37.76 |
| Madras | 25.1 | 25.3 | 25.52 |
| Burma | 20.41 | 22.03 | 20.82 |
| Bombay | 26.57 | 30.53 | 29.53 |
| United Provinces | 24.98 | 24.26 | 27.20 |
| Punjab | 32.4 | 28.75 | 29.66 |
| North-West Frontier Province | 22.8 | 23.66 | 21.89 |

* Average for 1925-29.

The death-rate of Assam was higher than that of Burma but lower than that of any other province.

3. The total number of births registered during the year was 214,835 which yields a birth-rate of 31.35 per mille of population, as compared with 224,594 and 32.77 respectively, in 1929 and 211,237 and 30.83 the quinquennial average.

The decrease in 1930 as compared with the previous year is unexplainable but it may be due to the economic conditions following the very high floods of the previous year in certain districts. The highest birth-rate was recorded in the district of Goalpara (35.70). The lowest birth-rate was recorded in Kamrup (26.81). The birth-rate of the Nowgong district for the year was 31.59, which was a little lower than that recorded in 1929 (32.13) but it was higher than that of the quinquennial average (28.45). The natural increase of population in this district during the year was 12.39 which was again the highest in the province. During the year, births exceeded deaths by 68,216 or 9.95 per mille of population, all districts contributing to the excess. The number of males born to every 100 females born was 106.

4. The total number of births registered in urban areas in the province in 1930 was 5,059 or 33.30 per mille of population as compared with 4,633 and 30.49 in 1929. The highest birth-rate, viz. 53.58, was recorded in Gauripur followed by Polashbari (50.75), Nowgong (47.20),

Barpeta (47.06) and Maulvibazar (40.49). The lowest rate was recorded in Silchar (18.23). This apparently low rate is probably incorrect and due to defective registration. The Inspector of Vaccination, who is responsible for checking the accuracy of registration in this town, should have shown more interest in this important branch of his duties. Tinsukia and Hailakandi towns, which reported low rates of 17.54 and 17.51 in 1929, reported rates of 31.42 and 26.48 respectively, in the year under report.

5. The total number of births registered in rural areas in 1930 was 209,776 or 31.31 per mille of population, as compared with 219,961 and 32.82 respectively, in 1929.
- Birth registration in rural areas.

The highest birth-rates (60.53) was recorded in the Kalaigaon circle in the Darrang district, followed by Barpeta (47.73) in Kamrup, Tinsukia (42.02) in Lakhimpur, North Salmara (41.73), Mankachar (41.32) and Dudnai (41.31) in Goalpara, Jaintiapur (41.20) in Sylhet and Panerihat (40.22) in Darrang. Unreliably low rates were reported from the Margherita circle (5.96) in Lakhimpur and Majuli (7.46) in Sibsagar. The vaccination inspecting staff should verify vital statistics in these circles more carefully.

6. The total number of deaths registered in 1930 was 146,619 giving a ratio of 21.40 as compared with 143,283 and 20.91 in 1929 and 153,618 and 22.42 the quinquennial average. A slight increase as compared with the rate of the previous year is due to the prevalence of malaria in the districts of Nowgong, Sibsagar and Lakhimpur. Calculated on the provisional census figure for 1931 the death-rate for the year 1930 would be 18.53. The highest district death-rate was recorded in Goalpara (25.34), followed by Darrang (23.67) and Lakhimpur (23.02). The death-rates in Goalpara and Darrang districts were higher than those for the preceding year but they were below the quinquennial average. The death-rate in the Lakhimpur district was higher than that of the preceding year and that of the quinquennial average. Fevers accounted for the higher mortality in this district. As *kala azar* is not prevalent in this district, malaria apparently is responsible for the increase.
- Death registration—general.

7. The total number of deaths registered during the year in urban areas, in which registration is compulsory, was 3,272, yielding a death-rate of 21.54, as compared with 3,102 and 20.42 in 1929 and 22.06 the quinquennial average. The highest rate was recorded in Doom-Dooma (42.17), followed by Tezpur (35.33), Gauripur (34.56) and Mangaldai (34.21). Fevers, small-pox, dysentery and respiratory diseases accounted for the high mortality in Doom-Dooma. Dysentery, respiratory diseases and diseases grouped under "Other Causes" were responsible for the high mortality in Tezpur. Fevers were responsible for the high mortality in Gauripur and Mangaldai and in the former small-pox was an additional contributory cause. Rates below 15 per mille were recorded in Tinsukia (13.31) and Silchar (12.94).
- Death registration in urban areas.

8. The total number of deaths registered in rural areas in 1930 was 143,347 or 21.39 per mille of population, as compared with 140,181 and 20.92 in 1929 and 22.43 the quinquennial average. Considering registration circles individually Kalaigaon circle in the Darrang district again reported the highest rate, *viz*, 49.10 per mille of population. Other high rates were Panerihat circle (40.42) and Udalguri (31.49) in the same district, Mankachar (39.41) in Goalpara, Doom-Dooma (31.26) and Tinsukia (31.05) in Lakhimpur and Gowainghat (30.95) in Sylhet. The high mortality in Kalaigaon circle was due to malaria, *kala azar* and cholera, as in the previous year. Malaria was mainly responsible for unhealthiness in the other circles mentioned above. Other contributory causes were cholera and small-pox in Mankachar, small-pox in Tinsukia and Doom-Dooma and cholera and small-pox in Gowainghat. The rates reported from Margherita (4.58) in the Lakhimpur district, Majuli (6.38) in Sibsagar and Boko (9.37) in Kamrup were too low to be reliable and must have been due to defective registration.
- Death registration in rural areas.

9. The subjoined table shows the defects in registration of vital statistics in compulsory urban areas, is discovered by the vaccination inspecting staff during the year 1930 :—

| Municipalities. | Unregistered vital occurrences during the year 1930. | | Recorded vital occurrences. | | Percentage of omissions. | |
|------------------------|--|---------|-----------------------------|---------|--------------------------|---------|
| | Births. | Deaths. | Births. | Deaths. | Births. | Deaths. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Silebar | 5 | 4 | 181 | 128 | 2.69 | 3.03 |
| Hailakandi | 2 | 1 | 57 | 33 | 3.39 | 2.94 |
| Sylhet | 14 | 6 | 522 | 310 | 2.61 | 1.90 |
| Karimganj | 12 | 10 | 101 | 71 | 10.62 | 12.35 |
| Maulvibazar | 6 | 4 | 129 | 62 | 4.44 | 6.06 |
| Habiganj | 7 | 6 | 175 | 137 | 3.85 | 4.20 |
| Sunamganj | 7 | 5 | 160 | 101 | 4.19 | 4.72 |
| Dhubri | 2 | ... | 233 | 150 | .85 | ... |
| Goalpara | 12 | 3 | 143 | 95 | 7.74 | 3.06 |
| Gauripur | ... | ... | 231 | 149 | ... | ... |
| Gauhati | 23 | 2 | 478 | 277 | 4.59 | .72 |
| Barpeta | ... | ... | 552 | 273 | ... | ... |
| Polashbari | 12 | 5 | 127 | 48 | 8.63 | 9.43 |
| Tezpur | 12 | 7 | 221 | 256 | 5.15 | 2.66 |
| Mangaldai | 1 | 1 | 21 | 34 | 4.55 | 2.86 |
| Nowgong | 15 | 5 | 310 | 195 | 4.62 | 2.50 |
| Jorhat | 12 | 5 | 187 | 141 | 6.08 | 3.42 |
| Sibsagar | 9 | 6 | 181 | 75 | 4.74 | 7.41 |
| Golaghat | 9 | 1 | 119 | 99 | 7.03 | 1.00 |
| Nazira | 12 | 9 | 89 | 52 | 11.88 | 14.75 |
| Dibrugarh | 9 | ... | 472 | 374 | 1.87 | ... |
| North Lakhimpur | 8 | 2 | 49 | 40 | 14.04 | 4.76 |
| Doom-Dooma | ... | 1 | 26 | 48 | ... | 2.04 |
| Tinsukia | 5 | ... | 101 | 41 | 4.72 | ... |
| Shillong | ... | ... | 525 | 247 | ... | ... |
| Total | 194 | 83 | 5,390 | 3,436 | 3.47 | 2.36 |

The number of omissions detected does not represent the actual condition of registration in various towns, but, within certain limits, is an index of the activity of the inspecting staff. In Gauripur and Barpeta towns no omissions were detected, which shows that the Inspector or Sub-Inspector responsible for the work did not properly perform his duties. In Shillong, births and deaths have not been verified for some years past in spite of the Director of Public Health and Civil Surgeon repeatedly pointing this out.

A total of 248 persons were prosecuted for failing to register an occurrence of a birth or death and 200 persons were convicted and fined Rs. 199. This works out to an average fine of Re. 1 per head.

10. The table below shows the recorded birth and death-rates in the Hill Districts in 1930 as compared with those of the preceding year :—

| Districts. | 1930. | | 1929. | |
|--------------------------------|-------------|-------------|-------------|-------------|
| | Birth-rate. | Death-rate. | Birth-rate. | Death-rate. |
| 1 | 2 | 3 | 4 | 5 |
| Khasi and Jaintia Hills | 29.25 | 16.99 | 26.79 | 18.72 |
| Naga Hills | 26.94 | 18.84 | 20.05 | 17.63 |
| Lushai Hills | 51.08 | 30.04 | 53.45 | 28.35 |
| Garó Hills | 29.73 | 23.37 | 28.25 | 19.09 |

In the Khasi and Jaintia Hills district, the increased birth-rate and decreased death-rate for the year under report indicate comparative healthiness. The mortality, from infectious diseases, *viz.* cholera, small-pox, malaria, dysentery and respiratory diseases was less than in the previous year. No fewer than fourteen distinct and separate outbreaks of cholera occurred in the district between January and August. All were introduced into the district from the neighbouring district of Sylhet. The outbreak at Theriaghat in July was directly responsible for the outbreak at Pynter and Laitlyngkot and later in Darrang in the Khasi and Jaintia Hills district. Had information regarding the Theriaghat infection reached the Civil Surgeon earlier, the spread of the disease to more distant places might have been avoided. On the whole, information was supplied with reasonable promptness and medical relief was despatched at once. Inoculation and the administration of bacteriophage were resorted to freely and were doubtless responsible for the rapid control of each outbreak. The Epidemic Unit staff was largely employed and was of incalculable value. Two minor outbreaks of small-pox were reported but they were controlled at once without a fatality.

In Shillong, 525 births and 247 deaths were recorded in 1930, as compared with 521 and 279 in 1929. The birth and death-rates per 1,000 of population work out to 30.52 and 14.36, respectively. It is a matter for congratulation that, despite the number of outbreaks of cholera in the district, none occurred in Shillong. To have achieved this result reflects great credit on the Public Health Administration of the district under Lieutenant-Colonel D. L. Graham, O. B. E., I. M. S. During the year 57 cases of enteric fever were notified as having occurred within the municipality. While a considerable proportion of these cases were found on investigation to have occurred outside the municipal area, the majority occurred within the limits of the town. A very serious outbreak of this disease, with 9 cases occurred in the Don Bosco Industrial School during November. This followed an annual feast during which a great deal of food for consumption was brought in from surrounding rural areas. The outbreak came on with startling suddenness, with very marked bronchial symptoms, and the first cases were regarded for a few days as broncho-pneumonia until the disease was diagnosed by blood culture. The cases were isolated immediately on discovery and the whole school was inoculated immediately. Enteric fever is the most serious infectious disease with which the municipality has to deal. In Shillong better facilities for diagnosis are now offered by the Pasteur Institute, who undertake to do Widal and Blood culture tests at a reduced cost in the case of poor or indigent patients. In this way it is hoped that earlier diagnosis will ensure prophylactic protection to those associated with the case. One case of diphtheria and 5 cases of tuberculosis were also reported from this municipality. A very unsatisfactory feature of this municipality is the fact that no house to house verification of vital statistics with a view to detecting unreported cases has been carried out for some years past.

In the Naga Hills district, registration is carried out in the headquarters town of Kohima and in the rural circle of Dimapur whose aggregate population together is 4,936 only. Anti-malaria measures that are being carried out in Kohima have considerably reduced the number of mosquitoes and produced an improve-

ment in the health of the local people. An outbreak of cholera occurred in two villages named Khonoma and Kenoma. The total number of cases and deaths reported were 51 and 22, respectively. A section of the Kamrup Epidemic Unit was detailed immediately to deal with the outbreak. The source of infection could not be traced but it was probably introduced from the plains. The villages were isolated and the inhabitants inoculated. Bacteriophage was also used. Malaria is prevalent all over the district.

In the Lushai Hills, a lower birth-rate and higher death-rate shows that the general health of the district was worse than that of the previous year. The chief disease was malaria. Two itinerating sub-assistant surgeons with medicines and equipment toured throughout the district. One of their chief duties is to inspect the sanitary condition of villages and to advise the villagers on sanitary matters, especially in connection with the protection of water-supplies. The campaign against syphilis was, as usual, carried out throughout the year with fairly good results. The majority of cases of this disease were found in the Lungleh subdivision, chiefly among the "Lakhs". These patients were admitted into the Lungleh hospital after the closure of the Tuipang civil hospital for in-patients.

In the Garo Hills district, malaria and *kala azar* were less prevalent during the year under report than in the year 1929. Cholera broke out in sporadic form in the latter part of the year. Infection was imported from the neighbouring plains districts. Sub-Assistant surgeons were promptly sent to the infected areas where 3,625 inoculations were performed, with the result that outbreaks were prevented from spreading and assuming larger proportions. Sporadic cases of small-pox were also reported. Vaccination and revaccination was promptly undertaken and the spread of the disease prevented.

In the Sadiya Frontier Tract vital occurrences are recorded in Sadiya town, two tea gardens, two saw-mills and certain villages. The population of these areas is not available. A total of 564 births and 451 deaths were reported during the year, as compared with 565 and 447, respectively, in 1929. The chief prevailing disease is malaria.

In the Manipur State there is no system of registration of births and deaths. Totals of 31 deaths from cholera and 16 from small-pox were reported in weekly epidemic returns during the year.

11. The following table shows the birth and death-rates reported from tea estates during the year 1930 :—

| Districts. | | | | | | Birth-rate. | Death-rate. |
|------------|-----|-----|-----|-----|-----|-------------|-------------|
| 1 | | | | | | 2 | 3 |
| Cachar | ... | ... | ... | ... | ... | 34.20 | 23.17 |
| Sylhet | ... | ... | ... | ... | ... | 32.31 | 19.75 |
| Goalpara | ... | ... | ... | ... | ... | 32.08 | 20.55 |
| Kamrup | ... | ... | ... | ... | ... | 24.13 | 17.17 |
| Darrang | ... | ... | ... | ... | ... | 22.60 | 14.85 |
| Nowgong | ... | ... | ... | ... | ... | 26.11 | 17.62 |
| Sibsagar | ... | ... | ... | ... | ... | 35.26 | 19.91 |
| Lakhimpur | ... | ... | ... | ... | ... | 28.86 | 21.72 |
| Total | | | | | | 31.05 | 20.13 |

The birth and death-rates on tea estates were 31.05 and 20.13, respectively, in 1930, as compared with 29.60 and 19.09 in 1929. There was a natural increase of 10.92 per 1,000 of population in tea estates during the year 1930. No epidemic of

cholera or small-pox was reported from any garden during the year. A total of 63 deaths from *kala azar* was reported from certain tea estates in the districts of Darrang (27), Sylhet (14), Sibsagar (14) and Nowgong (8). Tea estates treat their *kala azar* patients with Urea Stibamine, which they obtain under special arrangements from the manufacturer of the drug at the concession rate at which it is supplied to the Government of Assam.

12. The total number of births and deaths recorded within railway limits were 143 and 285, respectively, as compared with 135 and 251, respectively, in 1929. The largest number of deaths, *viz.*, 112 was recorded under "Other Causes," the next largest (104) under "respiratory diseases." No case of cholera or small-pox was recorded during the year.

13. The maximum birth-rate (3.48) was recorded in January and the minimum (1.96) in June. As in the previous year mortality was the highest (2.16) in *December* and the lowest (1.23) in *March*.

14. The infantile mortality calculated on the registered births was 182.66 for males, 165.75 for females, total 174.44.

The deaths and death-rates among infants calculated on the births of the year for the last ten years are given in the appended table :—

| Year. | Births. | | | Deaths of infants. | | | Death-rate of infants. | | |
|-------|---------|---------|---------|--------------------|---------|--------|------------------------|---------|--------|
| | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1921 | 105,395 | 97,758 | 203,153 | 21,174 | 16,864 | 38,038 | 200.90 | 172.50 | 187.23 |
| 1922 | 100,433 | 94,465 | 194,898 | 21,268 | 17,361 | 38,629 | 211.76 | 183.78 | 198.20 |
| 1923 | 101,861 | 95,657 | 197,518 | 19,367 | 16,089 | 35,456 | 190.13 | 168.19 | 179.50 |
| 1924 | 110,107 | 102,648 | 212,755 | 21,636 | 17,671 | 39,307 | 196.49 | 172.15 | 184.75 |
| 1925 | 103,009 | 96,252 | 199,261 | 19,009 | 15,733 | 34,742 | 184.53 | 163.45 | 174.35 |
| 1926 | 108,967 | 102,266 | 211,233 | 21,029 | 17,403 | 38,432 | 192.98 | 170.17 | 181.94 |
| 1927 | 107,461 | 99,828 | 207,289 | 19,253 | 16,266 | 35,519 | 179.16 | 162.94 | 171.35 |
| 1928 | 110,774 | 103,283 | 214,057 | 20,233 | 16,587 | 36,820 | 182.65 | 160.59 | 172.01 |
| 1929 | 116,177 | 108,417 | 224,594 | 19,374 | 15,987 | 35,361 | 166.76 | 147.46 | 157.44 |
| 1930 | 110,400 | 104,435 | 214,835 | 20,166 | 17,310 | 37,476 | 182.66 | 165.75 | 174.44 |

It will be seen that the infant mortality for the province in 1930 was higher than that in 1929, 1928, 1927 and 1925 but it was lower than that of other years.

In the following table the infant mortality rate of Assam for the year 1930 is compared with that of other provinces :—

| | | | | | | |
|------------------------------|-----|-----|-----|-----|-----|--------|
| Assam | ... | ... | ... | ... | ... | 174.44 |
| Bengal | ... | ... | ... | ... | ... | 187.80 |
| Bihar and Orissa | ... | ... | ... | ... | ... | 137.8 |
| Central Provinces | ... | ... | ... | ... | ... | 241.82 |
| Madras | ... | ... | ... | ... | ... | 185.68 |
| Burma | ... | ... | ... | ... | ... | 202.26 |
| Bombay | ... | ... | ... | ... | ... | 187.14 |
| United Provinces | ... | ... | ... | ... | ... | 170.79 |
| Punjab | ... | ... | ... | ... | ... | 185.73 |
| North-West Frontier Province | ... | ... | ... | ... | ... | 146.54 |

The infant mortality rate of Assam was lower than that of Bengal, Central Provinces, Madras, Burma, Bombay and Punjab but higher than that of Bihar and Orissa, the United Provinces and the North-West Frontier Province.

Magic lantern demonstrations on child-welfare were given regularly in villages as in the previous year. The Lady Superintendent, Lady Kerr Child-Welfare Centre in Shillong, attended a total of 1,921 cases during the year, which included anti-natal cases, confinements, post-natal cases, etc. The Sylhet Social Service League, to whose funds Government contributed, gave 96 lectures on child-welfare in different parts of the Sylhet district. During the year the League opened a class for the training of "Dhais" at Akhalia. Twenty women including some village *dhais* attended the lectures. If the experiment proves successful, the League proposes to open more centres. The Provincial Medical Licentiates' Conference held child-welfare and maternity exhibitions at Silehar.

A chart showing infant mortality in Assam from 1912 to 1930 is attached.

The rates of mortality among the male and female sexes were 21.43 and 21.36 in 1930 as compared with 21.01 and 20.80 in 1929. The proportion of male deaths to female deaths was 110 to 100.

The number of still-births registered during the year was 8,535 as compared with 8,465 in 1929. There were, as usual, differences in death-rates among the different communities. These were in the following order—Other classes 28.08, Muhammadans 22.74, Christians 19.79, Hindus 19.77 and Buddhists 13.14.

15. The total number of birth and death entries tested by the vaccination inspecting staff in 1930 was 86,666 (54,060 births and 32,606 deaths) as compared with 71,354 (44,384 births and 26,970 deaths) during the previous year, showing an increase of 15,312. The percentage of omissions detected was 7.44 in respect of births and 4.88 in respect of deaths in 1930, as compared with 7.84 and 4.90, respectively, in 1929. Sylhet stood first with 44,120 entries tested, followed by Lakhimpur with 12,249 and Nowgong with 8,575. Goalpara again stood last with 835 entries only tested. The number of entries tested rose from 2,946 to 6,223 in Kamrup.

16. There was no change in the agency for the collection and registration of vital statistics. The system of granting four rewards of Rs. 20 each in the subdivisions of Gauhati, Barpeta, Tezpur, Mangaldai, Nowgong, Dibrugarh and North Lakhimpur to selected *gaonburas* for good work in reporting vital statistics was continued during the year. Weekly epidemic reports from districts were regularly published in the Provincial Gazette and in certain local papers for the information of the general public.

SECTION VI.

HISTORY OF CHIEF DISEASES.

17. The annexed statement compares the death-rates per mille under the chief causes of mortality in 1930 with those of the average of the previous ten years:—

| | 1920-29. | | | 1930 | | |
|-----------------------------|----------|--------|--------|--------|--------|--------|
| | Urban. | Rural. | Total. | Urban. | Rural. | Total. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Cholera ... | .86 | 1.49 | 1.47 | .34 | .94 | .92 |
| Small-pox ... | .16 | .53 | .51 | .16 | .18 | .18 |
| Plague ... | ... | ... | ... | ... | ... | ... |
| Fevers ... | 6.90 | 14.85 | 14.67 | 5.86 | 13.27 | 13.10 |
| Dysentery and diarrhoea ... | 3.26 | 1.43 | 1.47 | 3.10 | 1.35 | 1.29 |
| Respiratory diseases ... | 2.99 | 1.02 | 1.06 | 3.03 | .81 | .86 |
| Injuries ... | .57 | .28 | .28 | .60 | .27 | .28 |
| All other causes ... | 7.69 | 4.65 | 4.73 | 8.44 | 4.58 | 4.67 |
| Total ... | 22.44 | 24.23 | 24.19 | 21.64 | 21.39 | 21.40 |

As compared with the decennial average, there was a decrease of the principal epidemic diseases, *viz.*, cholera, small-pox and fevers. The decrease under fevers is due to the intensive *kala azar* operations which are being carried out in the province.

Influenza

A total of 129 deaths from influenza was reported during the year as compared with 80 in 1929. Sporadic cases of the disease were reported from four districts.

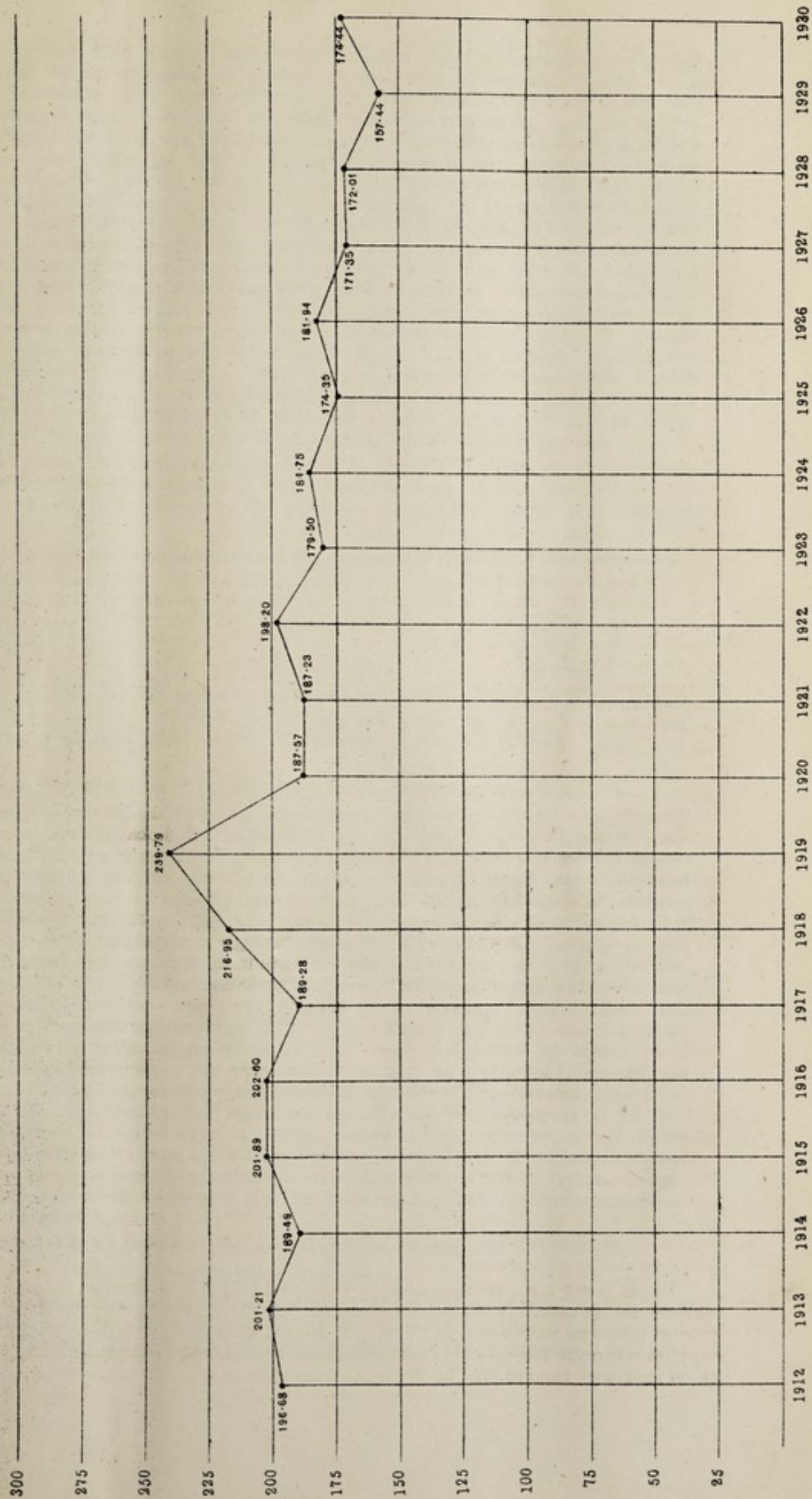
18. Cholera.

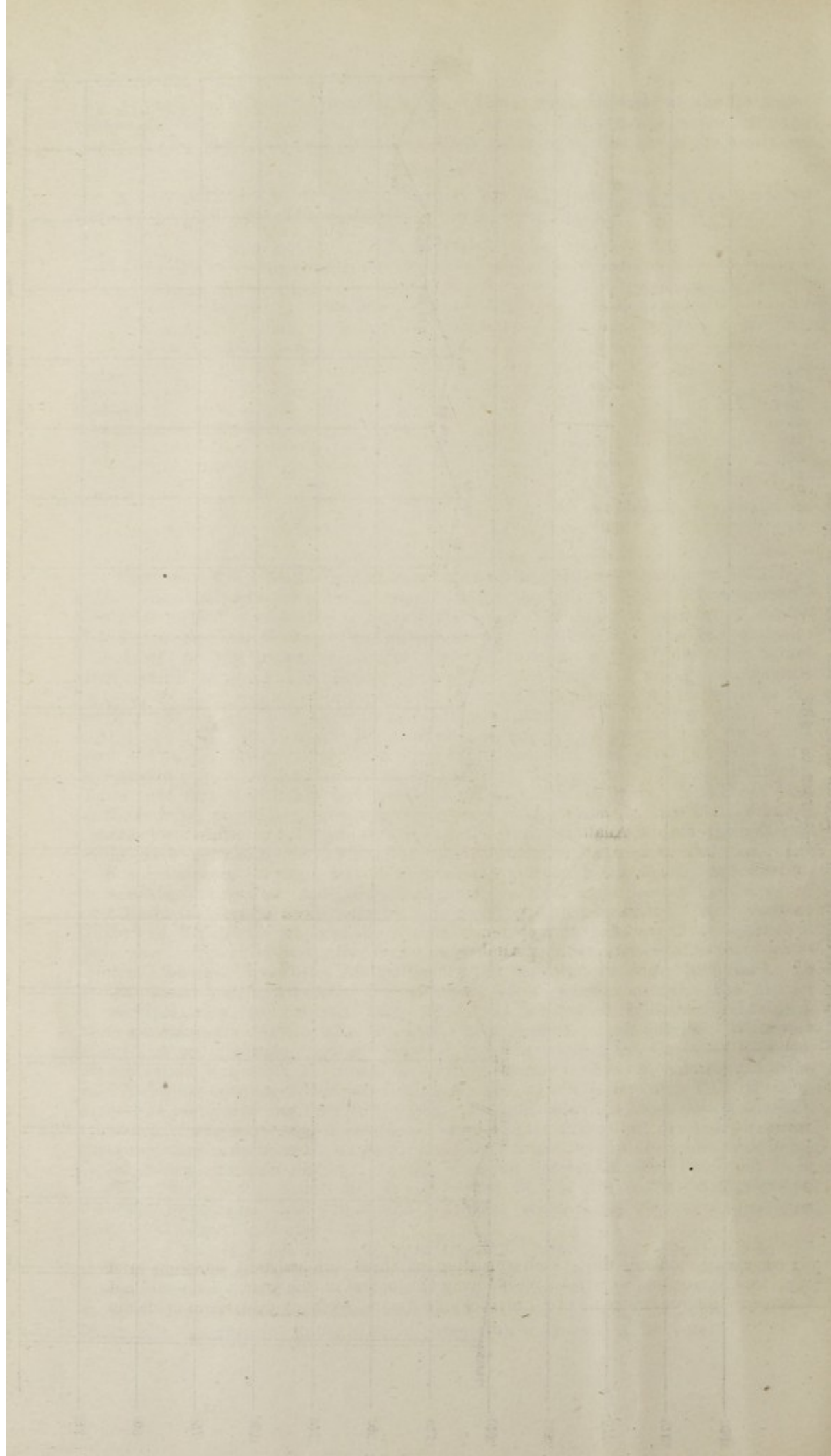
| Districts. | Death-rate per mile. | |
|---------------|----------------------|-------|
| | 1920-29. | 1930. |
| Cachar ... | 1.47 | 1.16 |
| Sylhet ... | 1.60 | 1.48 |
| Goalpara ... | 1.50 | 1.52 |
| Kamrup ... | 2.95 | 1.21 |
| Darrang ... | 1.59 | .41 |
| Nowgong ... | 1.49 | .13 |
| Sibsagar... | .47 | .12 |
| Lakhimpur ... | .28 | .10 |
| Total ... | 1.47 | .92 |

There were 6,332 deaths from cholera in Assam in 1930, as compared with 7,765 in 1929. The death-rate per mille of population for the year 1930 was .92 as compared with 1.13 in 1929 and 1.47 the decennial average. The largest number of deaths (1,498) occurred in December and the lowest (125) in August. The highest death-rate (1.52) from this disease was reported from the Goalpara district followed by Sylhet (1.48) and Kamrup (1.21). There was no epidemic of cholera in any other districts. In Goalpara there was a severe earthquake in July which affected all the wells in the district, more or less, and there was widespread scarcity of drinking water. The local boards did their best with Government grants to provide new wells and repair old ones. Cholera in sporadic form broke out after the earthquake of July. It assumed epidemic form in October in Mankachar, South Salmara, Lakhimpur, Dhubri and Goalpara thanas and persisted till the end of the year. Had it not been for the prompt preventive measures which were undertaken by the Civil Surgeon assisted by the Deputy Commissioner and Chairmen of Local Boards, the epidemic would have been extremely widespread and severe. An epidemic unit consisting of 3 sub-assistant surgeons and 6 disinfectant carriers is located in this district. In addition to this staff, sub-assistant surgeons and local board doctors in charge of local boards and *kala azar* dispensaries were employed on cholera duty. The Assistant Director of Public Health and the Assistant Surgeon on *kala azar* duty supervised their work. The chief preventive measures were inoculation and disinfection of water supplies wherever possible. Altogether 15,180 inoculations were performed. In Sylhet, cases of cholera were for the most part of a sporadic nature. The district is provided with two epidemic units which are located at Sylhet and Habiganj. More are necessary for the efficient control of epidemics in this district. Whenever a report of an epidemic from any part of the district reached the Civil Surgeon, prompt action was taken by him to detail the necessary staff for inoculation purposes. The Assistant Director of Public Health for the Surma Valley and Hill Division supervised preventive measures on the spot. The epidemic unit sub-assistant surgeons, sub-assistant surgeons and local board doctors in charge of local dispensaries, supernumerary sub-assistant surgeons and local board epidemic doctors inoculated 85,591 persons in this district. In the Kamrup district, cholera broke out in a sporadic form. An epidemic unit is also located in this district. Prompt measures, including inoculation, were undertaken to localize infection and to prevent the disease from assuming an epidemic form.

In the Nowgong district a serious widespread outbreak was anticipated in the wake of the devastating floods in the month of September. As the floods receded prompt measures were taken in the shape of mass inoculation and disinfection of water-supplies wherever possible. These measures were justified and proved most effective, as no case was reported in the district from then to the end of the year.

CHART NO. I
 Infantile Mortality (per 1,000 of Births) in the Province of Assam,
 from 1912 to 1930





In a province like Assam, inoculation and the prompt disinfection of water-supplies must be our mainstay in controlling outbreaks of cholera. It has to be mentioned that since 1925, when epidemic units were first introduced in the province, inoculation against cholera has steadily gained in popularity, so much so, that requests for inoculation are now invariably made in anticipation of an outbreak of the disease. As mentioned in the last annual Public Health Report, prompt measures are possible only after medical officers of health have been provided in each of the plains districts. Civil Surgeons are at present responsible for the control of epidemics in their districts in addition to their other duties. Epidemics cannot therefore receive the amount of attention which they deserve. Civil Surgeons are precluded from carrying out investigations and organising a campaign against an outbreak of epidemic disease on the spot, owing to their other work at headquarters. This results in loss of time with the consequence that outbreaks persist for much longer than they need. Under these circumstances a needlessly high mortality is to be expected. The above and many other difficulties will be overcome when District Health officers are sanctioned for the plains districts. These officers, being whole-time Public Health officers and possessing the requisite qualifications, are in a position to organise prompt and efficient measures of control with the staff at their disposal as well as being able to proceed to the scene of an outbreak at once, which is all important.

On the occasion of the devastating floods in the Cachar district during 1929, the Cachar Flood Relief Committee contributed the sum of Rs. 2,530-8-0 in 1929 and Rs. 1,913-8-0 in 1930 towards the purchase of cholera vaccine and bacteriophage.

The amount of cholera vaccine issued in the province since 1925 is as follows :—

| | | | | | | |
|------|-----|-----|-----|-----|-----|---------------|
| 1925 | ... | ... | ... | ... | ... | 103,930 c. c. |
| 1926 | ... | ... | ... | ... | ... | 154,760 " |
| 1927 | ... | ... | ... | ... | ... | 419,880 " |
| 1928 | ... | ... | ... | ... | ... | 237,778 " |
| 1929 | ... | ... | ... | ... | ... | 356,047 " |
| 1930 | ... | ... | ... | ... | ... | 220,532 " |

During the year 145,498 persons were inoculated in the province, excluding those inoculated on tea gardens for which figures are not available. Inoculation is very popular on tea gardens and the number of persons inoculated there must be very large.

A total of 112, 213 doses of bacteriophage was issued during the year 1930.

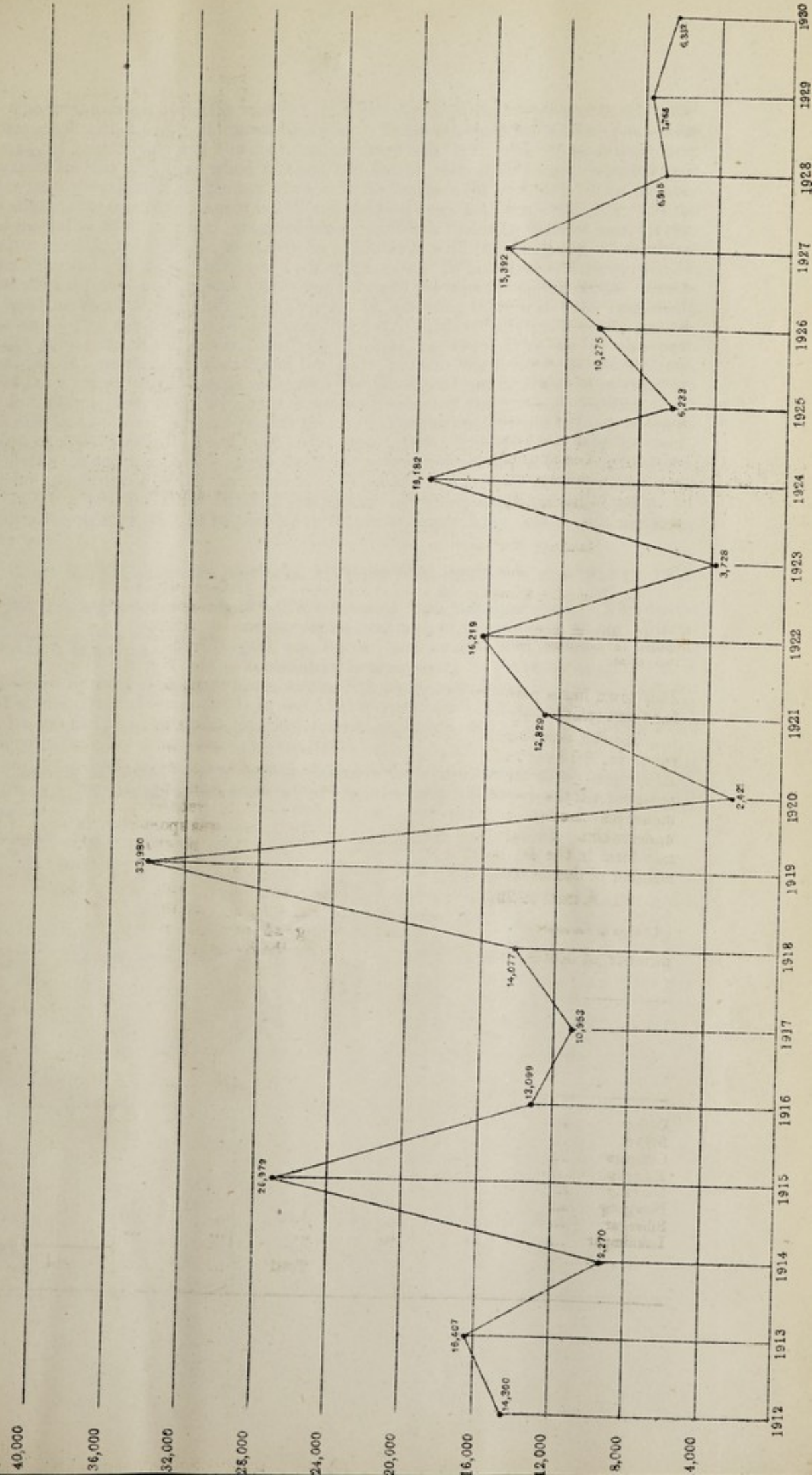
A notice was printed and circulated throughout the province advising pilgrims to the *Kunbh mela* held at Allahabad in January and February to have themselves inoculated against cholera before proceeding on their journey. This was on their own as well as in the public interest. A similar notice was published in all local newspapers and copies were pasted up in all public places such as post offices, railway and steamer stations, police stations, law courts and local and municipal board offices. The public were warned that cholera in severe epidemic form would probably break out, as had happened in previous years, both at Allahabad and on the various pilgrim routes. Sufficient supplies of cholera vaccine were maintained at local board and *kala azar* dispensaries and information was given many days in advance to the effect that inoculations at these institutions would be given free on any day at a specified hour. Large stocks of vaccines and an adequate staff were maintained at district and subdivisional headquarters for the purpose of meeting any untoward demand for inoculation. It was however anticipated that the number of pilgrims attending from Assam would be very limited, and this is borne out by the fact that a total of 197 pilgrims only were inoculated against cholera before leaving the province. These pilgrims were exclusively from the Surma Valley. No outbreak of cholera in Assam can in any way be attributed to pilgrims attending the *mela*. Cholera vaccine manufactured at the Pasteur Institute and Medical Research Institute, Shillong, was offered to other provinces on sale.

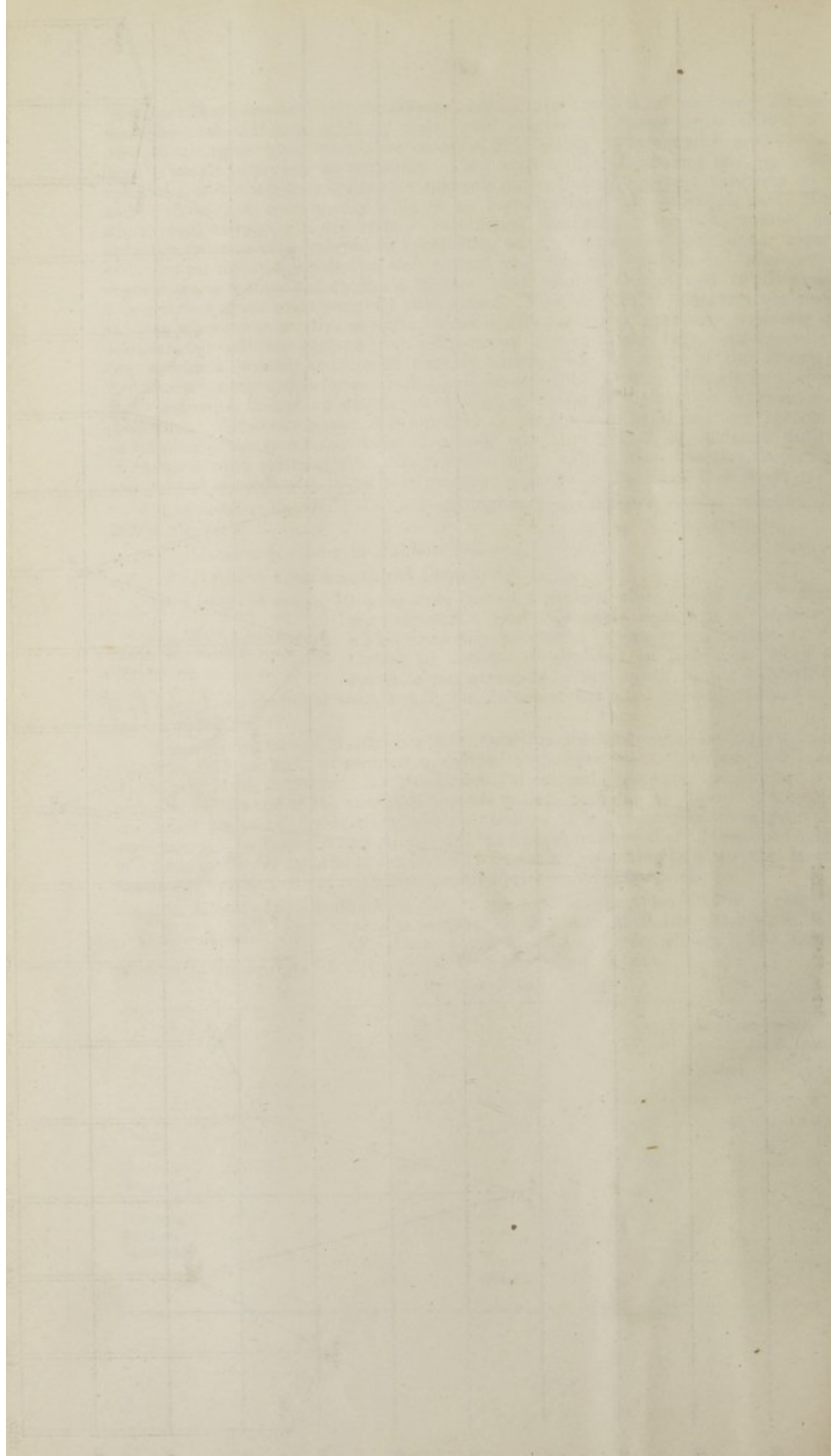
Chart No. II shows the provincial mortality from cholera from 1912 to 1930.

EPIDEMIC UNITS.

Five mobile epidemic units, each consisting of three sub-assistant surgeons and six disinfectant carriers, were employed during the course of the year. These are not sufficient for the requirements of a province like Assam, as many diseases in epidemic

CHART NO. II
Mortality from Cholera in Assam
from 1912 to 1930





The total number of deaths reported from small-pox during the year 1930 was 1,208 as compared with 1,648 in the preceding year. The death-rates for the two years were '18 and '24 respectively and the decennial average was '51. The disease was most prevalent in May and June when 229 and 233 deaths, respectively were reported and it was least prevalent in December when only 30 deaths were recorded. The number of deaths under one year of age was 158 and that between 1-10 years was 162. Of the total mortality 26.49 per cent. occurred among children under 10 years of age. There was a noticeable reduction in mortality in all districts with the exception of Goalpara and Lakhimpur, in which there was a slight increase. In both these districts, sporadic cases were reported and prompt action was taken to prevent the spread of the disease by deputing vaccinators to infected villages. In Nowgong there was only one death from small-pox against four in the preceding year. This reflects great credit on the district public health and medical staff who pushed on vaccination as in the past. Small-pox is a preventible disease and the only preventive measure is vaccination. There is no reason why the same satisfactory results should not be obtained in Goalpara and Lakhimpur districts in which there was an increase of the disease. In the Goalpara district the Civil Surgeon reports that he is handicapped by not having adequate control over the appointment of local board vaccinators. This defect should be rectified forthwith and the Civil Surgeon should be given power to select the most suitable men for appointment by the local boards. As pointed out in the Public Health Report for 1929, the need for rural sanitary inspectors in police circles is still urged, as, through this agency, it will be possible in future to appreciably lessen the incidence of disease.

Chart No. III shows the provincial mortality from small-pox from 1912 to 1930.

22. The highest death-rate (3.02) was reported from Gauripur town. Two deaths

High rates of mortality from small-pox in individual towns and rural areas,

were reported from each of the towns of Dhubri, Dibrugarh and Doom Dooma and 6 deaths from Goalpara.

Vaccination is compulsory in these towns and there is no reason why they should not have been as free as the remaining 19 towns. Among rural circles, Doom-Dooma (3.05) in the Lakhimpur district and South Salmara (2.27) and Dhubri (2.17) in Goalpara reported somewhat higher rates, but in these, cases were sporadic. Forty rural circles were free.

There is no special hospital in this province for the isolation and treatment of small-pox. Particulars of cases treated in the infectious diseases hospitals are given below:—

| Municipal towns. | | | Number of small-pox patients treated. | Vaccinated as evidenced by presence of one or more vaccination cicatrices. | Stated to have been successfully vaccinated, but no vaccination cicatrice present. | Stated to be unvaccinated (or vaccinated unsuccessfully) and no vaccination cicatrice present. | Previously unvaccinated but vaccinated during incubation of small-pox. | Stated to have been successfully vaccinated. |
|------------------|----|-----|---------------------------------------|--|--|--|--|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| Gaubati | 6 | 5 | ... | ... | ... | 1 | | |
| Tezpur | 2 | 2 | ... | ... | ... | ... | | |
| Dhubri | 14 | 11 | 1 | 2 | ... | ... | | |
| Shillong | 3 | ... | ... | 3 | ... | ... | | |

23.—FEVERS.

| Districts. | | | | | | Death-rate per mille. | |
|------------|-----|-----|-----|-----|-----|-----------------------|-------|
| | | | | | | 1920-29. | 1930. |
| 1 | | | | | | 2 | 3 |
| Cachar | ... | ... | ... | ... | ... | 12.31 | 11.15 |
| Sylhet | ... | ... | ... | ... | ... | 14.54 | 11.58 |
| Goalpara | ... | ... | ... | ... | ... | 25.03 | 21.42 |
| Kamrup | ... | ... | ... | ... | ... | 14.41 | 11.89 |
| Darrang | ... | ... | ... | ... | ... | 15.20 | 15.70 |
| Nowgong | ... | ... | ... | ... | ... | 15.39 | 15.22 |
| Sibsagar | ... | ... | ... | ... | ... | 9.89 | 10.39 |
| Lakhimpur | ... | ... | ... | ... | ... | 9.96 | 12.53 |
| Total | | | | | | 14.67 | 13.10 |

The deaths registered during the year under the head "Fevers" numbered 89,772 as compared with 83,520 in 1929 and 100,551 the decennial average. The corresponding death-rates per mille of population were 13.10, 12.19 and 14.67, respectively. This head includes, in addition to mortality due to malaria and *kala azar*, deaths which were due to various diseases having fever as their terminal symptom. Deaths under this head represent 61.16 per cent. of the total mortality. The largest number of deaths (9,379) was recorded in July and the smallest (5,151) in March. As *kala azar* is now under control, the increase of 6,252 deaths during the year under report indicates the greater prevalence of malaria more especially in certain parts of the districts of Nowgong, Sibsaagar and Lakhimpur, where the disease was already known to be prevalent. In each of these districts the mortality under this head was the highest in July. Quinine was distributed through post offices as usual. An additional grant was made to the Civil Surgeon, Nowgong, for the purchase of quinine and chinchona febrifuge for free distribution. The activities of the Assam Medical Research Society, which has recently been constituted, will be helpful in revealing the extent to which malaria is prevalent in Assam.

Chart No. IV shows the provincial mortality from fevers from 1920 to 1930.

MALARIA.

24. Quinine, as a preventive against malaria, is sold in treatment form below cost price, at post offices throughout the province. Where these and dispensaries do not exist, the drug is sold by specially appointed agents. Detailed instructions as to how to use it are given with each treatment. A patient can avail himself of its benefit without medical aid. Indigent patients are treated with this drug free of charge at all dispensaries. Illustrated pamphlets on malaria are read by students in all primary schools in the province. In these pamphlets is explained, in simple colloquial language, the cause of malaria, its cure and prevention. Magic lantern demonstrations and lectures on malaria are also given in villages by the *kala azar* Assistant Surgeons. Their educative effect as revealed by these graphic demonstrations is of immense value in depicting methods of protection against the disease. In the course of their tours in villages, the Assistant Directors of Public Health visit schools and give short lectures on malaria.

Kala azar, which has been the scourge of the province is now under control. The time has come to make a determined endeavour to combat the ravages of malaria which is now responsible for the highest mortality amongst all the prevailing diseases in the province. Assam admittedly is a very highly malarious province. The application of any practical measures aimed at the eradication of the disease must of necessity be preceded by careful and detailed research. Much valuable information is necessary before any successful campaign against the disease can be launched. The

Mortality from Small-pox in Assam
from 1912 to 1930

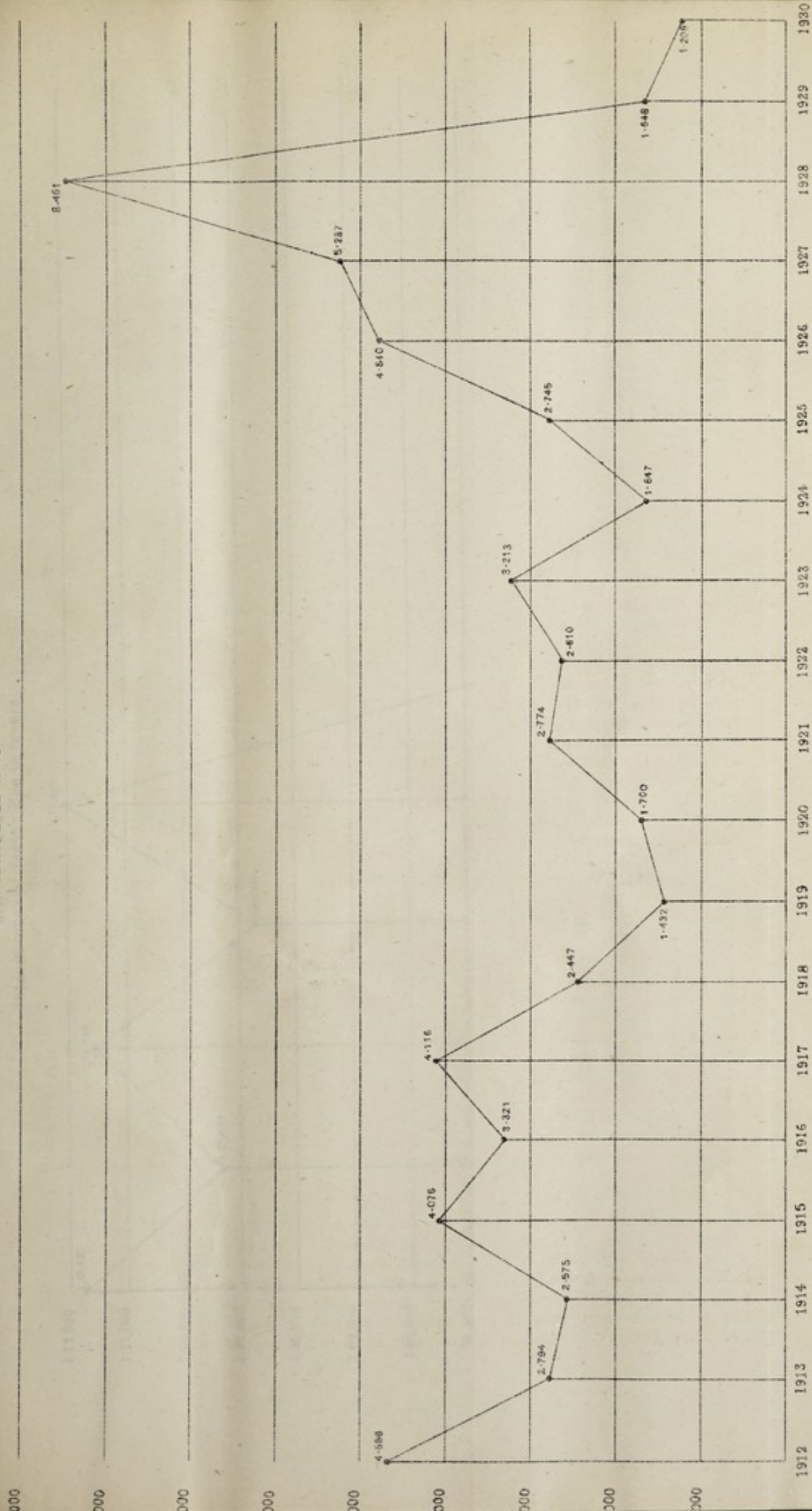
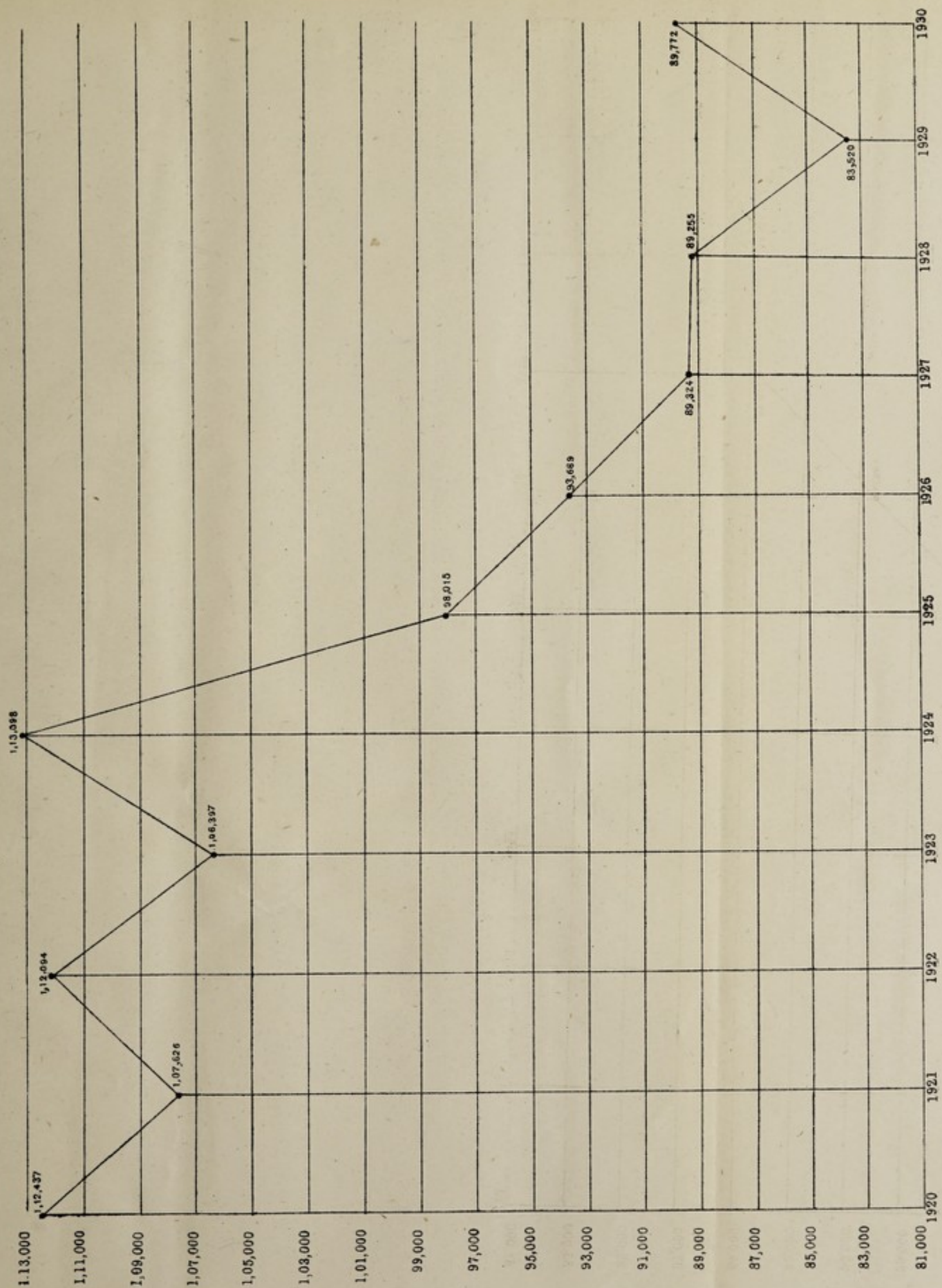


CHART NO. IV
Total number of deaths due to fevers



Assam Medical Research Society has been formed primarily with this object in view. We wish it every success and look forward to the time when it will be able to give us information on which the Public Health Department can base practical efforts to eradicate the disease. The closest co-operation between the society and the Public Health Department is necessary in the execution of any campaign against malaria. It is hoped in years to come, that funds will be made available by Government for the application of practical methods of eradication of the disease which will be based on the results of the researches of the society.

Anti-malarial measures were carried out at Haflong, Kohima, Pasighat, Luming and Kachugaon, the details of which are given below. A preliminary malaria survey of Sidli, Gossaingaon, Nongpoh and Khanapara Cattle Farm were carried out by the Assistant Director of Public Health, Assam Valley Division, during the year.

The anti-malaria operations at Haflong were carried out on the same lines as in the year 1929. A gang of eight men under a "moharir" worked under the control of the Subdivisional Officer, who is also Chairman of the Bazar Fund. Additional labourers were employed when the sanctioned number could not cope with the work. As a measure of economy the post of "moharir" was dispensed with and the Bazar Fund Sub-overseer was placed in charge of the operations. The gang was employed in keeping lakes and drains all over the civil station free from weeds and undergrowth and finding out the breeding places of mosquitoes and treating them with oil. The whole station has been divided into five blocks and each block has been placed under one or two gangmen. The lakes were oiled once a week between October and March and twice a week from April to September. Projecting tongues of some of the lakes were re-excavated as far as practicable. The edges of the lakes were kept free from undergrowth and the lakes themselves kept free from vegetation. Most of the damaged drains have been repaired. Some of the *kutchra* drains have been plugged. Drip-cans containing anti-malaria oil were placed in various *nullahs* in the station and functioned throughout the year. Certain big old trees with holes in them were cut down. Several species of larvicide fish were reared in the lakes. A scientific study of the species of anopheles mosquito present in the station is required. This will be taken up by the Assistant Director of Public Health, Surma Valley and Hill Division, in the current year if possible.

No new anti-malarial work of any importance was carried out in the Luming railway area during the year. All known breeding places in that area were regularly treated with a mixture of crude and castor oil. Drip-cans were in use in different parts of the station. The local dispensary return shows an increase of 20 cases of malaria treated. In May and June there was a mild outbreak of influenza in the station and it is possible that some of these cases might have been wrongly diagnosed and shown as malaria. A further malaria survey of the place by the Medical Department of the railway is about to be undertaken.

At Pasighat, the Morali stream to the west of the station is the main breeding ground of anopheles mosquitoes. This stream was oiled regularly throughout the rains by means of a series of drip-cans placed at intervals, and its edges were kept clear of jungle. Pools of water found in the station itself were sprayed with oil. Prophylactic quinine was issued during the rains to men of the 2nd Assam Rifles and their families. Cinchona was issued to the men of the permanent coolie corps. Riflemen and coolies discharged from the hospital after malaria were given post-hospital treatment with quinine or cinchona for two months. Mosquito nets were used. The incidence of malaria among the men of the 2nd Assam Rifles showed an increase as compared with that for 1929. This was particularly so in June and August when the rainfall was very heavy. On the other hand there was a marked decrease in the incidence of malaria amongst the permanent coolie corps.

At Kohima, anti-malaria work was taken up on the 15th April and ended on the 20th October. As in previous years a staff of one sirdar, one assistant sirdar, and 30 coolies were engaged to keep down all scrub in the station from its western extremity near "Kuki-picket" to the outskirts of Kohima village. All trickling streams were bunded to get an expanse of water which could then be treated with oil. Pools and runnels were duly oiled by drip-cans placed near the principal pools. It is reported that there was an almost complete absence of mosquitoes in the station during the year. The admissions for malaria in the local hospitals and dispensaries during the

year show an increase but this is attributed to the importation from the plains of new comers including Naga coolies in an infected condition. On the whole the above measures are reported to have had a beneficial effect on the health of the local population. The Assistant Director of Public Health inspected the anti-malaria operations in Kchima in 1930. He will be detailed to make a mosquito survey of the place and ascertain the particular species of anopheles mosquito which is responsible for malaria whenever an opportunity offers.

At Kachugaon, the banks and bed of the Barali stream, which is suspected to be a breeding ground of anopheles mosquitoes were cleared of jungle and the river oiled. *Kutchra* drains were kept clear of jungle. Low growing jungle was kept down by means of a tractor. Roads were gravelled. Malaria and black-water fever in this area have not decreased to the extent it was hoped. Since the close of the year a detailed anti-malarial survey of the area has been arranged and is being carried out by the Assistant Director of Public Health, Assam Valley Division. Valuable information with regard to the varieties of anopheles mosquitoes responsible for the propagation of malaria in the area and their habits should be forthcoming in due course. During the year the Assistant Director of Public Health, Assam Valley Division, made a preliminary investigation into the cause of unhealthiness of the Sidli and Gossaigaon areas of the Goalpara district. Sidli has an area of 87 square miles with a population of about 225, and Gossaigaon has an area of 120 acres with a population of 350. Local evidence shows that malaria is very prevalent in these areas. An examination of 60 children in Sidli revealed an enlargement of the spleen in 58, giving a splenic index of 96.6 per cent. At Gossai-gaon 90 per cent. of the children examined showed enlarged spleens. A thorough malaria survey of the above areas is required. The Assistant Director of Public Health, Assam Valley Division, visited the Cattle Breeding Farm of the Agricultural Department at Khanapara. The farm has an area of 230 acres with a population of about 100 people. There are numerous low-lying hollows throughout the farm, some of which serve for paddy cultivation. There are very few children on the farm. Of 50 persons examined 40 had enlarged spleens, thus giving an adult spleen rate of 80 per cent. Situated at the foot of the hills and having innumerable facilities for mosquito breeding it is natural to expect a high incidence of malaria in this area. A thorough malaria survey of the place is indicated.

The causes of the unhealthiness of Nongpoh where the up and down traffic to and from Shillong meets, were investigated. The place consists of 26 houses with a total population of 106. The local dispensary records show a high incidence of malaria. Cases of black-water fever are also reported from this place. A mosquito survey of the place is necessary. This will be undertaken as soon as possible. The Civil Surgeon, Khasi and Jaintia Hills, recommends that three small areas in it should be drained. A proper drainage scheme for the place is receiving the attention of the Public Health Engineer.

25. Amongst towns, Nazira again recorded the highest death-rate from fevers

High rates of mortality from fevers in individual towns and rural areas. (18.24) which is much higher than that recorded last year, viz., 14.82. Other high rates were Doom Dooma (15.49) Golaghat (15.32), Mangaldai (14.66) and Gauripur (13.22).

An Urban Health Officer is not employed in any of the above named towns. It is therefore possible that deaths caused by other diseases of which fever is a symptom, may have been wrongly classified under fevers. The above death-rates are higher than that of the preceding year and indicates the greater prevalence of malaria in these towns during the year. Among rural circles, Kalaigaon in the Darrang district again reported the highest death-rate of 38.82 which is a little higher rate than in the preceding year (37.05) Panerihat, Udalguri and Behali in the same district, North Salmara, Mankachar, Golakganj, Dudnai, Goalpara and Dhubri in Goalpara, Doom Dooma, North Lakhimpur, and Jaipur in Lakhimpur, Lumding in Nowgong and Gowainghat in Sylhet reported death-rates varying from 20 to 30 per mille of population. Too much reliance cannot be placed on the classification of the cause of death by the illiterate *gaonburas* and *chowkidars* who recorded these deaths in rural areas. Malaria and *kala azar* were undoubtedly mainly responsible for these high rates.

KALA AZAR.

26. The following table shows the number of deaths from *kala azar* from 1921 to 1930.

| District. | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Cachar ... | 1 | ... | 4 | 2 | 3 | 9 | 12 | 2 | 3 | 2 |
| Sylhet... | 183 | 275 | 841 | 1,874 | 2,109 | 1,320 | 798 | 482 | 429 | 274 |
| Goalpara ... | 557 | 253 | 442 | 309 | 453 | 297 | 226 | 166 | 135 | 112 |
| Kamrup ... | 755 | 450 | 976 | 1,152 | 1,120 | 714 | 475 | 241 | 180 | 102 |
| Darrang ... | 169 | 202 | 289 | 448 | 478 | 474 | 318 | 258 | 241 | 185 |
| Nowgong ... | 1,172 | 933 | 1,291 | 1,479 | 1,445 | 839 | 528 | 260 | 173 | 132 |
| Sibsagar ... | 121 | 128 | 289 | 235 | 200 | 170 | 143 | 86 | 87 | 58 |
| Lakhimpur ... | 3 | 4 | 13 | 13 | 8 | 1 | 5 | 5 | 1 | 2 |
| Khasi and Jaintia Hills. | ... | ... | ... | ... | 8 | 4 | 3 | 4 | ... | ... |
| Naga Hills ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | 1 |
| Lushai Hills ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... |
| Garo Hills ... | 26 | 47 | 54 | 69 | 435 | 346 | 350 | 154 | 149 | 84 |
| Sadiya Frontier Tract | ... | ... | 2 | 4 | 3 | 1 | 1 | 1 | 1 | ... |
| Manipur State ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | 1 |
| Total ... | 2,987 | 2,292 | 4,131 | 5,585 | 6,365 | 4,176 | 2,859 | 1,660 | 1,405 | 953 |

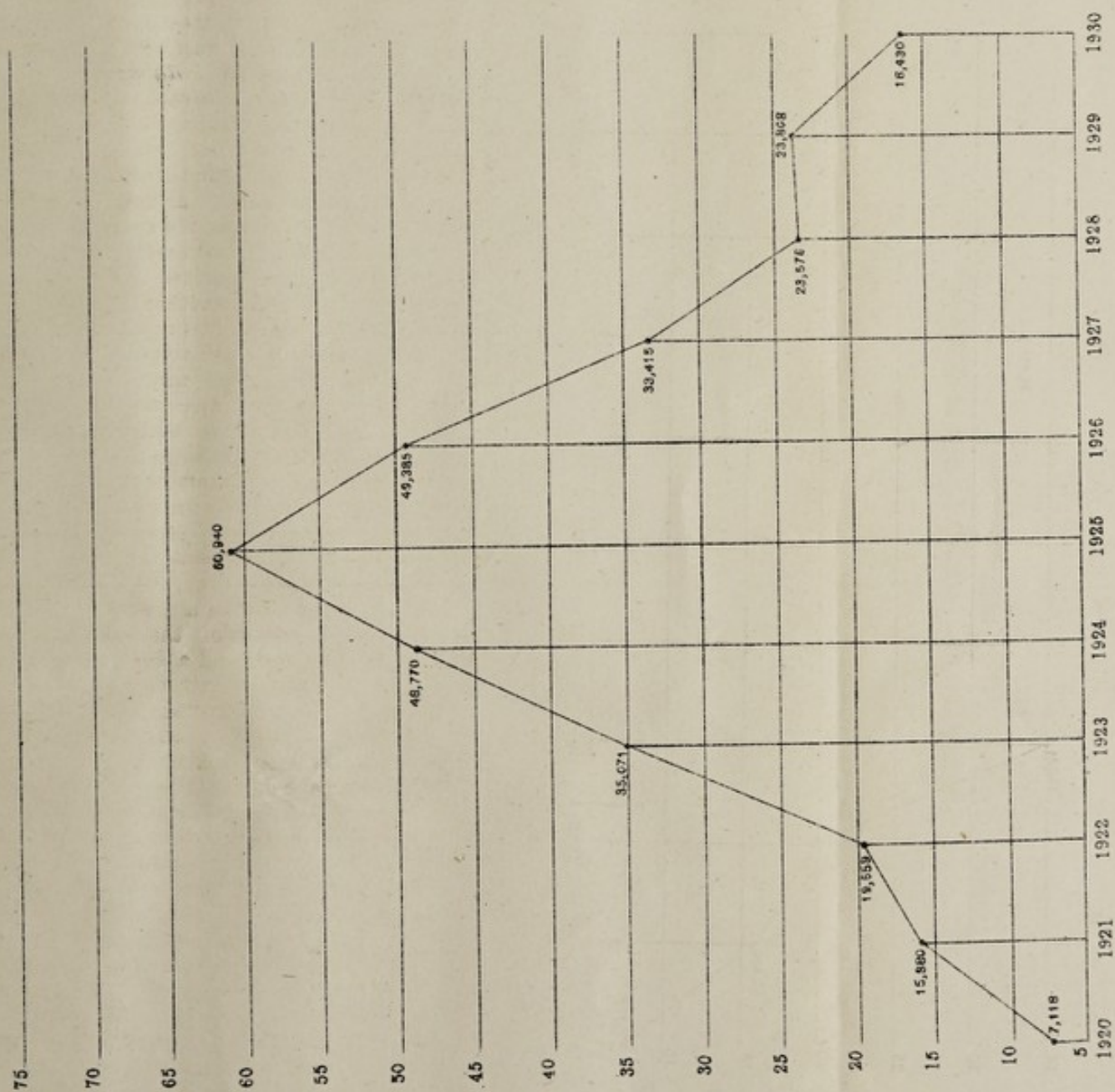
The following table shows the number of *kala azar* cases treated from 1921 to 1930.

| District. | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Cachar ... | 316 | 210 | 352 | 253 | 442 | 333 | 359 | 394 | 470 | 376 |
| Sylhet ... | 2,837 | 5,148 | 9,278 | 16,516 | 10,934 | 16,355 | 10,527 | 8,988 | 9,162 | 6,726 |
| Goalpara ... | 2,500 | 2,731 | 4,176 | 5,016 | 6,003 | 5,671 | 3,425 | 2,316 | 2,389 | 1,439 |
| Kamrup ... | 3,491 | 2,700 | 4,098 | 5,780 | 8,758 | 7,301 | 6,445 | 3,577 | 2,598 | 1,814 |
| Darrang ... | 1,360 | 1,229 | 2,416 | 3,286 | 5,262 | 4,414 | 4,053 | 2,228 | 1,390 | 1,105 |
| Nowgong ... | 4,343 | 5,934 | 1,847 | 13,625 | 13,895 | 9,586 | 5,008 | 2,614 | 2,433 | 1,449 |
| Sibsagar ... | 875 | 1,307 | 2,143 | 2,929 | 3,285 | 2,658 | 1,521 | 1,555 | 2,387 | 1,495 |
| Lakhimpur ... | 22 | 12 | 68 | 81 | 99 | 20 | 19 | 28 | 23 | 23 |
| Khasi and Jaintia Hills. | 52 | 59 | 120 | 274 | 213 | 198 | 120 | 6 | ... | ... |
| Naga Hills ... | ... | ... | 4 | 3 | 4 | 2 | 1 | 5 | 9 | 21 |
| Lushai Hills ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... |
| Garo Hills ... | 84 | 329 | 589 | 985 | 1,952 | 2,812 | 1,628 | 1,600 | 2,905 | 1,805 |
| Sadiya Frontier Tract | ... | ... | ... | ... | 8 | 4 | 3 | 8 | 3 | 2 |
| Manipur State ... | ... | ... | ... | 22 | 85 | 31 | 36 | 166 | 35 | 83 |
| Total ... | 15,880 | 19,659 | 35,071 | 48,770 | 60,940 | 49,385 | 33,415 | 23,576 | 23,804 | 16,430 |

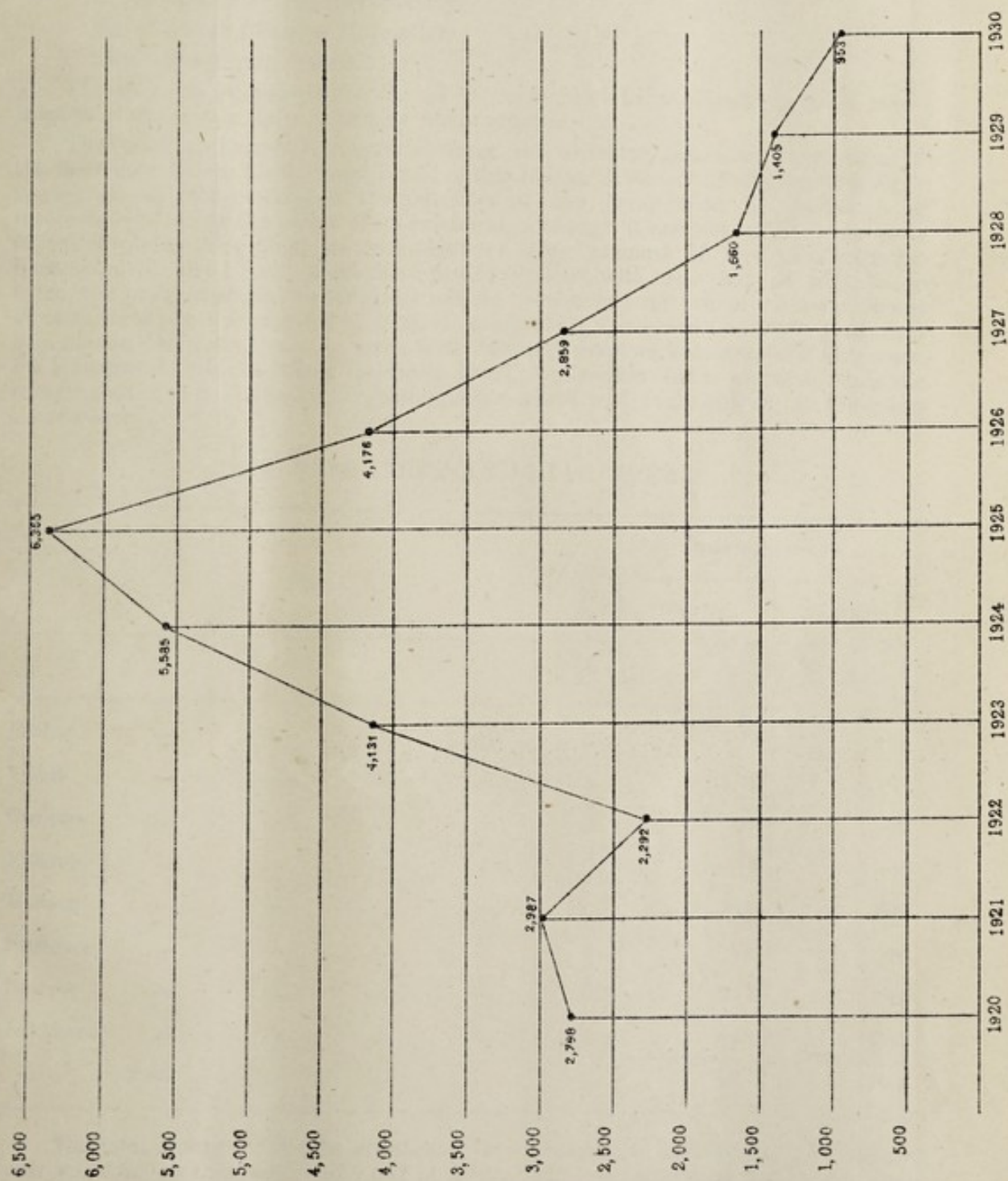
The attached charts show graphically the number of *kala azar* cases treated and the number of deaths from the disease in the province for the years 1920 to 1930 inclusive. They give some indication of the amount of work which was accomplished and the intensity of the campaign directed against the disease. Further, they indicate what the toll in human lives would have been had not this intensive campaign been carried out. It has to be remembered that the mortality from the disease amounted to over 95 per cent. when no cure was known. By diligent research with various drugs that have been placed on the market it has now been made possible to convert the above high death-rate into a live-rate of the same percentage. In certain areas of the province the disease has now been practically stamped out.

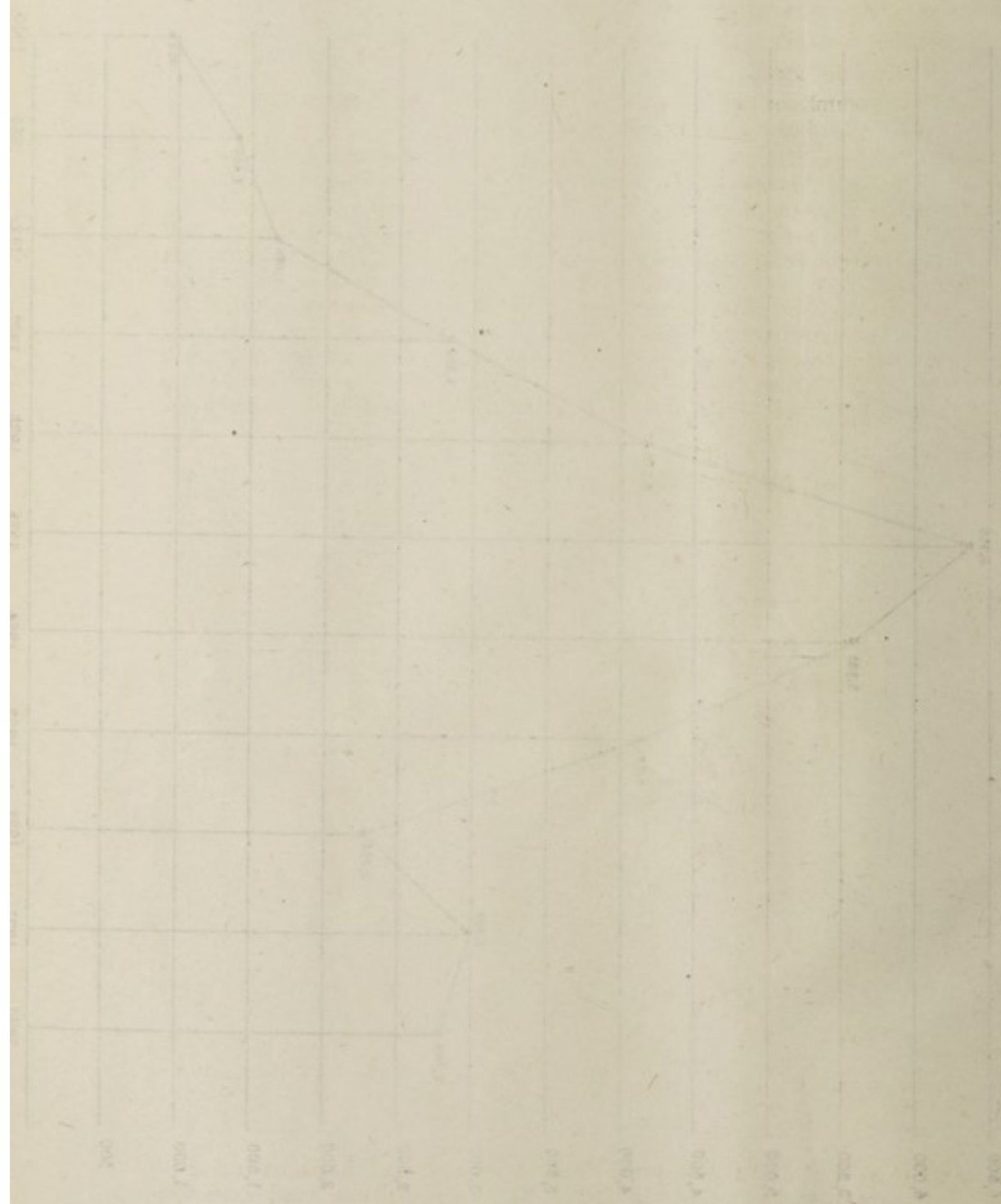
The number of deaths from *kala azar* fell from 1,405 in 1929 to 953 in 1930 and the number of *kala azar* cases treated fell from 23,804 in 1929 to 16,430 in 1930. The number of fresh cases brought under treatment during the year was 11,936 as compared with 18,464. The fall in the number of cases and deaths shows that the disease is under control. A case of *kala azar* is diagnosed by the Formal-Gel test and by clinical signs and symptoms. Special attention is paid to survey work as it is an important factor both in the campaign against *kala azar* and in the treatment of the disease itself. In *kala azar* infected districts repeated surveys were carried out by sub-assistant surgeons within a radius of five miles of their dispensaries. Special sub-assistant surgeons were posted exclusively for survey work in areas outside a radius of 5 miles of existing dispensaries and out-centres. Mass treatment with Urea Sitibamine (Brahmachari), which was introduced in 1926, was pursued during the year. One hundred and four sub-assistant surgeons in addition to the Medical Department sub-assistant surgeons and local board doctors were employed on the *kala azar* campaign during the year. The affected subdivisions of the Sylhet district in order of severity are Habiganj, Sunamganj, Sylhet sadar, Karimganj and Maulvi Bazar. In this district all subdivisional headquarters dispensaries treat in-door *kala azar* patients except Habiganj, where one in-door *kala azar* hospital is provided. At Sylhet and Sunamganj separate *kala azar* wards are provided. There were 37 out-door *kala azar* dispensaries with 73 sub-centres. The infection is still lingering in the Kaigora and Hailakandi thanas of the Cachar district. The former area has recently been again surveyed and 60 cases detected have been brought under treatment. An out-centre at Tarinipur village has been opened for this purpose. A sub-assistant surgeon has been detailed to survey the Hailakandi area. The itinerating sub-assistant surgeon of the North Cachar Hills subdivision surveys the hill villages and the cases detected are sent for treatment to the Maibong *kala azar* hospital. Basugaon and Sidli areas of the Goalpara district were found on survey to be heavily infected with *kala azar*, and a *kala azar* dispensary was opened at the former place. In the Kamrup district an attempt was made to detect *kala azar* cases from the villages at the foot of the Bhutan hills. Tambalpur and Jirang areas were thoroughly surveyed by two special sub-assistant surgeons with little success. *Kala azar* cases which were previously treated by the garden doctor of Amchong, Belguri and Sonapur tea estates have during the year been taken over by the sub-assistant surgeon of the Digaru *kala azar* dispensary. The survey by a special sub-assistant surgeon of the Orang-Lambari-Majbat area of the Darrang district was undertaken during the year. The railway hospital doctor at Lumding in the Nowgong district continued to treat cases among railway employees and those from the adjoining villages who attended the hospital. The special *kala azar* ward attached to the Nowgong hospital which had 20 beds for in-door treatment was closed in May on account of lack of patients. Facilities for both in-door and out-door treatment of *kala azar* patients in the Garo Hills district were extended during the year (1) by raising the number of beds in the Tura *kala azar* hospital from 155 to 200, (2) opening a new hospital at Bagmara with 20 beds, (3) converting the ward with 30 beds attached to the Dinadubi State dispensary and *kala azar* hospital at Bajingdoba with 50 beds into dieted hospitals, (4) opening out-door treatment centres at existing dispensaries at Bagmara, Dalu and Mohendraganj, (5) opening a new *kala azar* dispensary at Fulbari. Formerly patients treated in Dinadubi and Bajingdoba hospitals used to provide their own food. As touring in this district is very difficult sub-assistant surgeons who are hill men are provided for survey work. For efficient management of the *kala azar* work in the district an extra clerk was provided in the Civil Surgeon's office as in other districts in which the work is heavy.

Total Number of Kala Azar Cases Treated
from 1920 to 1930



from 1920 to 1930





The Assistant Surgeons and sub-assistant surgeons with few exceptions did good work. Civil Surgeons of *kala azar* infected districts and their subordinate officers deserve thanks for their whole hearted co-operation in this work.

The following sub-assistant surgeons deserve special mention for their work :—

Babu Sudhansu Bhushan Datta.

Babu Benoyendra Dhar Chaudhury.

Babu Nepal Chandra Dey.

Maulvi Syed Muhammad Habibur Rahman.

Srijut Subodh Chandra Gogai.

Srijut Jadav Chandra Chakravarty.

Srijut Suresh Chandra Majumdar.

Srijut Bhabanath Sarma.

The *kala azar* commission continued its researches into the problem of the transmission of the disease during the year under report.

The following extract from a letter from the Director, *kala azar* commission, to the Secretary, Scientific Advisory Board of the Indian Research Fund Association, in connection with the cessation of the activities of the commission in Assam is of interest :—“ During the period of its existence, although it has not achieved its main object of solving the problem of transmission, a large amount of new knowledge has been acquired, and I feel confident in predicting that, with the aid of this knowledge, the problem should be definitely soluble whenever and wherever a sufficiency of cases for study and experiment is again available. The closure of the *kala azar* commission does not necessarily mean that research work on *kala azar* will also cease, for I propose to ask the Indian Research Fund Association for a grant towards the carrying on of research on the *Trypanosomidae* which will include work on the genus *Leishmania*”.

27.—DYSENTERY AND DIARRHŒA.

| District. | | | | | | Death-rate per mille | |
|-----------|-----|-----|-----|-----|-----|----------------------|------|
| | | | | | | 1920-29 | 1930 |
| 1 | | | | | | 2 | 3 |
| Cachar | ... | ... | ... | ... | ... | 2.28 | 2.36 |
| Sylhet | ... | ... | ... | ... | ... | 1.40 | 1.22 |
| Goalpara | ... | ... | ... | ... | ... | .30 | .39 |
| Kamrup | ... | ... | ... | ... | ... | .79 | .69 |
| Darrang | ... | ... | ... | ... | ... | 2.05 | 1.78 |
| Nowgong | ... | ... | ... | ... | ... | .81 | .70 |
| Sibsagar | ... | ... | ... | ... | ... | 2.13 | 2.29 |
| Lakhimpur | ... | ... | ... | ... | ... | 2.54 | 2.41 |
| Total | ... | ... | ... | ... | ... | 1.47 | 1.39 |

The total number of deaths registered from dysentery and diarrhœa during the year was 9,520 as compared with 9,662 in 1929. The corresponding death-rates were 1.39 and 1.40, respectively, and 1.47 the decennial average. The highest number of deaths (1,092) was recorded in October and the lowest (417) in March. There was

no big variation in any district compared with the decennial average. Bacteriophage manufactured in the Pasteur Institute and Medical Research Institute is now largely used in the treatment of these diseases both among the general population and in tea gardens.

The mortality from dysentery and diarrhoea on tea estates during the year was 4.13 as compared with 3.81 in 1929. The recorded death-rates on tea estates in Cachar and Sibsagar rose from 4.30 and 3.81 in 1929 to 5.07 and 4.30, respectively, in 1930. In other districts variations were small.

28. No case of plague was reported during the year.

OTHER CAUSES.

29. Respiratory diseases were responsible for 5,859 deaths, yielding a death-rate of .86, the corresponding figures for the year 1929 being 5,794 and .85. The total number of deaths reported from injuries was 1,925 as compared with 2,111, the corresponding death-rates for the two years being .28 and .31 respectively. A total of 240 deaths were due to suicide, 1,409 to wounds or accidents and 224 attributed to snakes and wild animals. Fifty-two deaths occurred from hydrophobia. The total number of deaths registered under the head "All other causes" amounted to 32,003 which yield a ratio of 4.67 per mille, as compared with 32,783 and 4.78 in the preceding year.

SECTION VII.

VACCINATION.

Introductory.

30. This section deals briefly with vaccination in 1930-31 as compared with 1929-30.

Vaccination agencies.

31. The total number of vaccinators employed during the year 1930-31 was 463 as compared with 464 in 1929-30. Thirty disinfectant carriers of the Epidemic Units were employed, as in the previous year, as vaccinators when their services were not required for cholera duty. The average number of persons vaccinated by each vaccinator was 1,323 as compared with 1,390 in the preceding year. Vaccination in tea gardens was, as usual, performed by garden medical officers and in dispensaries, hospitals and railways by the respective medical officers.

32. The total number of vaccination operations performed during the year was 660,194 of which 335,280 were primary and 324,914 revaccinations, as compared with 694,117 of which 346,234 were primary and 347,883 revaccinations, in 1929-30. This reveals a decrease of 10,954 in primary operations and 22,969 in revaccinations. The total number of operations performed by different agencies is distributed as follows:—

612,512 operations by departmental vaccinators.

6,640 „ by the staff of dispensaries.

32,652 „ by tea garden agencies.

6,143 „ by Jail, Asylum, Police and Emigration hospital agencies.

2,247 „ by railway agency.

33. The provincial mortality from small-pox was the same as in the previous year, viz., .14 per mille of population. The highest death-rate of .61 was reported from the Goalpara district. There is much opposition to vaccination in this district. Small-pox in epidemic form prevailed in South Salmara thana area. All available vaccinators and the district Epidemic Unit staff were detailed there to deal with the epidemic. Vaccination and revaccination, under certain restrictions, were made compulsory under the special regulations published under Government Notification No. 467M., dated the 31st March 1930, in Bilasipara, Lakhimpur and Gossaingaon thanas of this district. Vaccination under very strict supervision was carried out in these areas. The attached chart illustrates the death-rates from small-pox in each district side by side with the proportion of the population protected against the disease by vaccination during the seven years 1924-25 to 1930-31.

34. A total of 6,640 persons were vaccinated at dispensaries during the year 1930-31 as compared with 8,044 in 1929-30. As stated in previous reports, vaccination by the dispensary staff is not encouraged. People visit dispensaries for vaccination only during epidemics.

35. The percentage of success in known cases was for all agencies, 94.99 in primary operations and 62.41 in revaccinations during the year, as compared with 95.14 and 66.84, respectively in 1929-30. The percentage of success in primary operations reported from the Lushai Hills district, *viz.*, 68.88 was much below that for other hill districts. The percentage of cases in which results were not ascertained, *viz.*, 13.73 in primary and 21.52 in revaccinations were again very high in the Goalpara district.

36. All vaccinations were performed, as in previous years, with glycerinated calf lymph made in the Provincial Vaccine Depot at Shillong.

37. Compared with the preceding year, the number of persons vaccinated by all agencies in the province during the year 1930-31 showed a decrease of 33,923 cases. The districts which showed an increase were Darrang (14,715) and Lakhimpur (11,124). The number of sporadic cases of small-pox reported from each of these districts was higher than that of the preceding year. The increase is due to vaccinations and revaccinations being performed from time to time in villages from which small-pox was reported. The Civil Surgeon of the Darrang district, in spite of the larger number of vaccinations having been performed, was not satisfied with the work in his district. He had ordered vaccinators to revaccinate only those persons who were over seven years of age. These orders had not been carried out strictly in accordance with his wishes. The decrease is most marked in Sylhet (—22,103), Cachar (—17,947) and Manipur State (—14,231). The decrease in Sylhet is attributed mainly to the lesser prevalence of small-pox in that district during the year. Further, a large number of vaccinations and revaccinations had been performed towards the beginning of the previous year owing to the prevalence of the disease in epidemic form. The decrease in the Cachar district is due, in some measure, to the Hailakandi Local Board having abolished the posts of four temporary vaccinators. This action on the part of the board was certainly unwise. The decrease in Manipur is ascribed to the absence of small-pox in the State during the year. A few sporadic cases only were reported and consequently revaccination had not to be carried out so extensively as was necessary in the preceding year.

38. The subordinate inspecting staff was the same as in the previous year and consisted of 9 inspectors, 20 permanent sub-inspectors, 10 temporary sub-inspectors and two sub-inspectors entertained by the Manipur State.

39. Civil Surgeons, Assistant Directors of Public Health, Assistant Surgeons on *kala azar* duty and Subdivisional Medical Officers inspected 7.36 per cent. of the primary operations and 5.93 of the revaccinations during the year 1930-31, as compared with 7.43 and 4.37 respectively in 1929-30. More inspection by superior officers is necessary in order to prevent falsification of registers by vaccinators. Much improvement in this respect may be expected when District Medical Officers of Health are provided.

The subordinate inspecting staff inspected 43.69 per cent. of the primary operations and 33.51 per cent. of the revaccinations, as compared with 49.02 and 36.00 in 1929-30. The percentages of primary operations inspected, *viz.*, 25.83 and 22.25 in the Goalpara and Darrang districts, respectively, were very low and much below the number prescribed in departmental circulars. There seems to be no explanation for this, except laziness and apathy on the part of the officers in these districts. In the Garo Hills only 16.36 per cent of the primary operations were inspected. The sub-inspector of vaccination was placed on census work during the vaccination season and this, to some extent, interfered with his duties.

40. During the year, out of 4,513 infants under one year available for vaccination in the towns in which vaccination is compulsory, 2,233 or 49·48 per cent. were successfully vaccinated, as compared with 46·35 per cent. in 1929-30. The degree of protection afforded to infants by successful vaccination appears satisfactory in the towns of Hailakandi, Habiganj, Goalpara and Nowgong, in which 75 to 100 per cent. of the available infants were vaccinated. The ratio was very low in Doom Dooma (5·55) Mangaldai (11·77), Golaghat (13·58), Gauripur (17·03), Maulvibazar (18·42) and Sunamganj (18·46). This shows a weakness in the administration of the provisions of the compulsory Act in these towns. In rural compulsory areas under village authorities in the Sylhet and Sibsagar districts 3,881 and 3,322 operations, respectively, were performed during the year, as compared with 3,723 and 1,871, respectively in 1929-30.

41. The total number of capillary tubes loaded for issue during the year 1930-31 was 1,041,077 as compared with 966,717 in 1929-30. During the year 845 calves were purchased and inoculated and lymph was taken from 719. Six calves died, 120 calves were rejected, 54 on account of failure of operations, 51 due to illness and 15 due to ulceration and unsatisfactory vesicles, as compared with 30, 52 and 11 in the preceding year. The average number of tubes filled per calf was 1,447, as compared with 1,358 in 1929-30. The total cost of working the Vaccine Depôt was Rs. 20,824 (of which Rs. 6,078 was on establishment, Rs. 6,131 on purchase of calves, Rs. 535 on feed of calves, Rs. 5,707 on vaccine tubes and Rs. 2,373 on miscellaneous contingencies), as compared with Rs. 21,305 in the preceding year. The lymph was, as usual, supplied free throughout the year to Civil Surgeons, inspectors and sub-inspectors of vaccination and to the Medical Officers of military units and municipalities. Tea gardens, railways, and Manipur State were supplied with lymph at the rate of one anna per tube.

Lieutenant-Colonel D. L. Graham held charge of the Depôt throughout the year except for two short periods, namely, from the 2nd April to 8th May 1930 and from the 24th January to 22nd February 1931. The subordinate charge of the depôt was held by senior grade sub-assistant-surgeon Narendra Nath Dam up to the 1st March 1931 when he retired and by sub-assistant surgeon Mon Mohan Sarkar from the 2nd to 31st March 1931.

42. The total cost of the department amounted to Rs. 1,19,712-9-6 during the year 1930-31, as compared with Rs. 1,19,818-1-0 in 1929-30. The cost of each successful vaccination was annas 4 and pies 4 in 1930-31, as compared with annas 4 in 1929-30.

43. Primary vaccinations and revaccinations performed by tea garden Medical Officers were 19,871 and 12,781, by Medical Officers in charge of jail hospitals, Mental Hospital, Police hospitals and infectious diseases hospitals 293 and 5,850, and by railway Medical Officers 364 and 1,883. Their successful percentages were 95·81 and 76·20, 86·52 and 25·95 and 93·31 and 54·20, respectively.

SECTION VIII.

SANITARY WORKS—MILITARY.

(No remarks.)

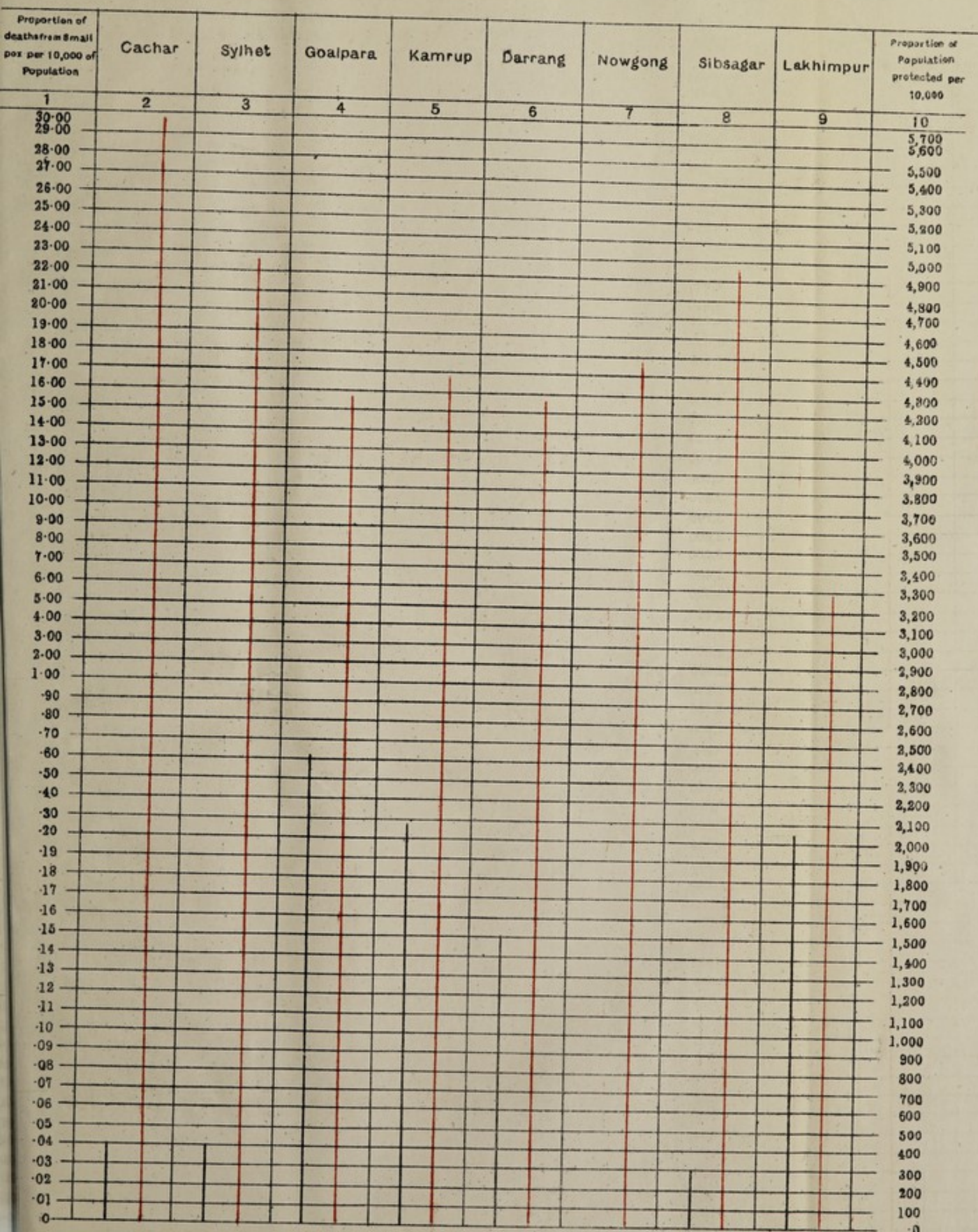
SECTION IX.

SANITARY WORKS—CIVIL.

44. The number of Municipal Boards and Town Committees during the year under report was the same as in the previous year, viz., seventeen municipal board and eight town committees.

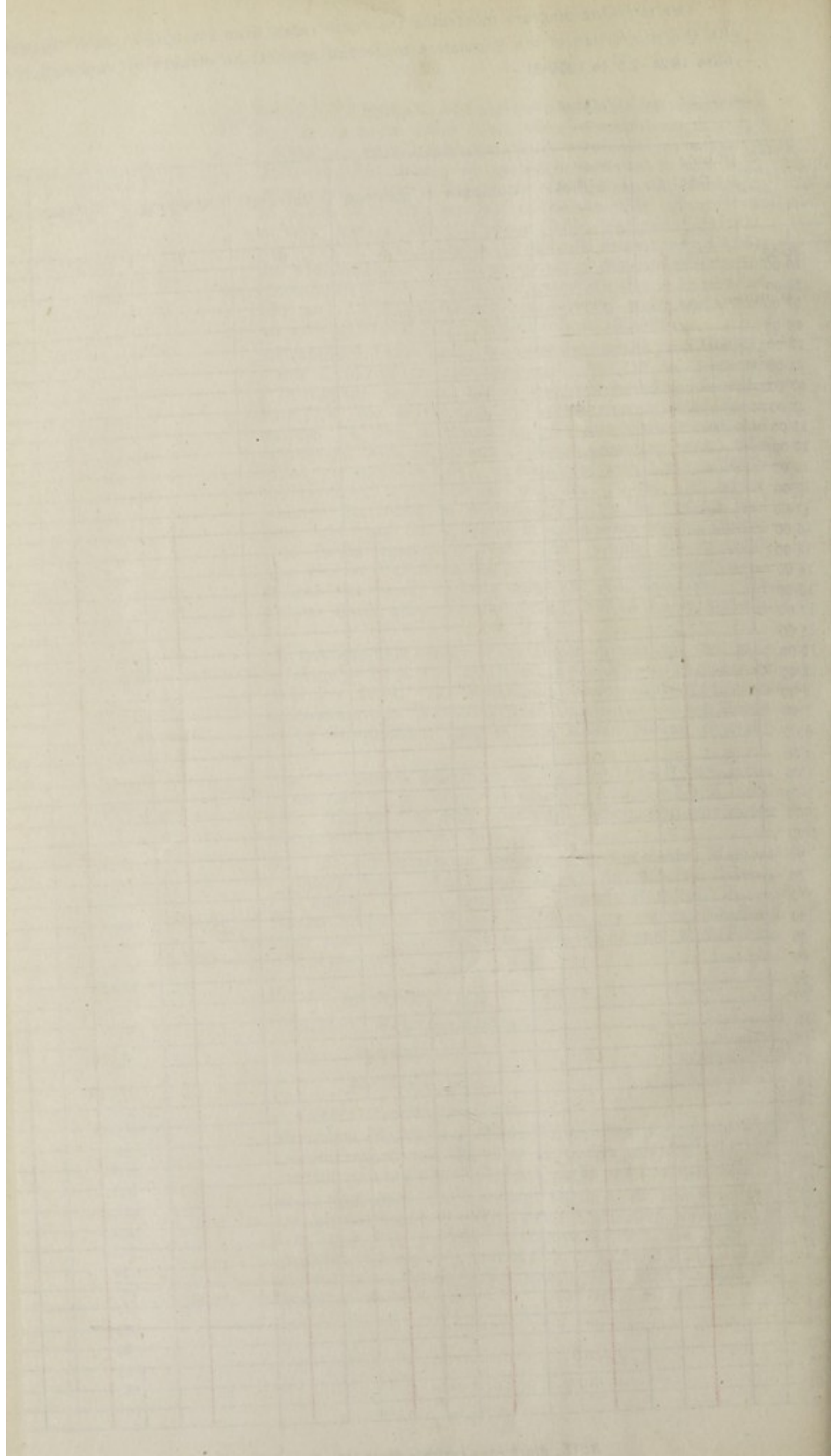
45. The aggregate income, including the opening balance of the seventeen municipal boards and eight town committees amounted to Rs. 12,82,601 in 1930, as compared with Rs. 12,26,502 in 1929. A sum of Rs. 5,62,055 or 43·82 per cent. of the total income was spent on different heads of sanitation as compared with Rs. 5,58,333 and 45·52, respectively in 1929.

The following diagram illustrates the death rates from Smallpox in each District side by side with the proportion of the Population protected against the disease by Vaccination during the seven years 1924-25 to 1930-31



NOTE. Black lines indicate death rate from Smallpox.

Red lines indicate the proportion protected by Vaccination.



The percentages of expenditure for each was as follows :—

| | | | | |
|------------------------------------|-----|-----|-----|-------|
| 1. Gauhati Municipal Board | ... | ... | ... | 62.62 |
| 2. Jorhat ditto | ... | ... | ... | 59.49 |
| 3. Doom Dooma Town Committee | ... | ... | ... | 55.59 |
| 4. Silechar Municipal Board | ... | ... | ... | 54.95 |
| 5. Dhubri ditto | ... | ... | ... | 53.90 |
| 6. Golaghat ditto | ... | ... | ... | 50.89 |
| 7. Tezpur ditto | ... | ... | ... | 47.76 |
| 8. Sylhet ditto | ... | ... | ... | 46.70 |
| 9. Habiganj ditto | ... | ... | ... | 45.83 |
| 10. Dibrugarh ditto | ... | ... | ... | 43.16 |
| 11. Tinsukia Town Committee | ... | ... | ... | 43.44 |
| 12. Palasbari ditto | ... | ... | ... | 41.46 |
| 13. Nowgong Municipal Board | ... | ... | ... | 40.77 |
| 14. Dhubri ditto | ... | ... | ... | 39.21 |
| 15. Shillong ditto | ... | ... | ... | 37.92 |
| 16. Nazira Town Committee | ... | ... | ... | 36.30 |
| 17. Malgaldai ditto | ... | ... | ... | 33.15 |
| 18. Gauripur ditto | ... | ... | ... | 30.53 |
| 19. Sunamganj Municipal Board | ... | ... | ... | 30.25 |
| 20. Sibsagar ditto | ... | ... | ... | 30.14 |
| 21. Karimganj ditto | ... | ... | ... | 29.70 |
| 22. Hailakandi Town Committee | ... | ... | ... | 28.94 |
| 23. Barpeta Municipal Board | ... | ... | ... | 28.48 |
| 24. North Lakhimpur Town Committee | ... | ... | ... | 26.23 |
| 25. Maulvibazar Municipal Board | ... | ... | ... | 22.03 |

The table below shows the expenditure for public health purposes during the year 1930, as compared with that in 1929 :—

| Heads of expenditure. | Total expenditure. | | Difference. | |
|--|--------------------|----------|-------------|-----------|
| | 1930. | 1929. | Increase. | Decrease. |
| 1 | 2 | 3 | 4 | 5 |
| | Rs. | Rs. | Rs. | Rs. |
| 1. Conservancy including establishment, road watering, latrine, etc. | 3,02,746 | 2,86,793 | 15,953 | ... |
| 2. Drainage | 29,405 | 29,567 | 9,838 | ... |
| 3. Water-supply | 1,54,200 | 1,73,099 | ... | 18,899 |
| 4. Disposal of the dead | 664 | 628 | ... | 34 |
| 5. Markets and slaughter houses | 21,950 | 24,589 | ... | 2,639 |
| 6. Vaccination | 5,293 | 5,370 | ... | 77 |
| 7. Pay of Health Officers and Sanitary Inspectors | 8,400 | 9,323 | ... | 923 |
| 8. Epidemic charges including upkeep of contagious and infectious diseases hospital. | 13,416 | 14,775 | ... | 1,359 |
| 9. Other sanitary works | 15,981 | 14,114 | 1,867 | ... |
| Total | 5,62,055 | 5,58,333 | 3,722 | ... |
| 10. Construction and maintenance of roads | 2,35,495 | 1,86,879 | 48,616 | ... |
| Total including roads | 7,97,550 | 7,45,212 | 52,338 | ... |

The increase of Rs. 15,953 under the head "Conservancy" is satisfactory as it shows more attention to surface cleanliness and to the disposal of night-soil. The Jorhat and Dibrugarh Municipal Boards incurred an expenditure of Rs. 11,194 and Rs. 8,690 in 1930 under the head "water-supply" which were much less than that incurred by these boards in 1929, viz., Rs. 20,304 and Rs. 14,203, respectively.

46. As usual the Director of Public Health and Assistant Directors of Public

Sanitary works.

Health inspected municipalities and small towns and offered their advice on public health matters. As pointed out in previous reports, the most pressing need in most towns in the province is a good type of sanitary private latrine which will allow easy access to sweepers and the same time can be kept reasonably clean. Bakeries, soda water factories and hotels are being conducted generally on unhygienic grounds. Enforcement of bye-laws for their control which are being adopted by some municipal boards will, it is expected, lead to better results.

Surma Valley Division.—At Silchar 12 gallons of water were consumed daily per head of the population in 1930. The periodical bacteriological analysis of the water-supply shows that a reasonably pure filtered water was supplied to the public. The total number of house connections was 375. The urgent need in Silchar town is an improvement in drainage and an extension of the piped water supply. A drainage scheme has been prepared. The provision of a maternity ward at the local charitable dispensary is an improvement. The municipal isolation shed, which is situated at some distance from the centre of the town, requires accommodation for attendants, water-supply and facilities for cooking. The bazar area of the Hailakandi town should be provided with *pucca* drains. The town committee should appoint a qualified conservancy inspector, as the present untrained staff cannot supervise the work of the conservancy department with any degree of efficiency. In Sylhet a proposal to extend the filtered water supply is under consideration. This should be taken up without delay as cholera is reported annually from this town. A new settling tank has been constructed but an additional overhead tank will be necessary if the supply is to be extended. A chlorinating apparatus has been provided at the water-works. There is need for a new sanitary type of dust bin for the main thoroughfares and for the bazar area. An efficient drainage system for the town is also an urgent necessity.

Three tube-wells have been provided in Habiganj. There is a scarcity of good drinking water in some parts of this town. The board is fully alive to the situation, and attention will be paid to this matter as soon as funds become available. The question of the general improvement of the water supply of this town is receiving the attention of the board. A new trenching ground or a septic tank at a reasonable distance from the residential quarters of the town is another necessity. The conservancy work of the municipal sweepers is not being efficiently supervised since this duty was taken away from the Urban Health Officer. The Board should appoint a qualified conservancy inspector for this purpose. A tube-well has been sunk near the bazar in Karimganj Municipality. The provision of a good water supply in Sunamganj town and more especially in the bazar area is a very pressing need. A tube-well has been sunk in the Maulvibazar town. The question of the general improvement of the water supply of this municipality is receiving the attention of the board.

Assam Valley.—The series of earthquakes in 1930 did considerable damage to the water-works and public wells in Dhubri town. The daily consumption of water per head of population in this town was $5\frac{1}{2}$ gallons. The total number of connections to houses provided numbered 48. The water from the water-works was analysed regularly in the Public Health Laboratory. Indications of contamination were observed in the samples collected in August and December. Drains in Gauripur town are being improved. A sum of Rs. 1,110 was expended on this during the year. A large *pucca* building for the fish market is being constructed in this town by the Gauripur Raj Estate at an estimated cost of Rs. 3,500. The water-supply of the Goalpara municipality requires improvement. People in some parts of the town, where there are no public wells, have to use river water. Cholera and other water borne diseases first make their appearance in these areas and then spread to other parts of the town. The board spent Rs. 2,295 on providing wells during the year. The Government Health Officer working under the Civil Surgeon in the Gauhati

Municipality was replaced by a municipal Health Officer under the direct control of the municipality. It is too early yet to state whether the change has effected an improvement. A public latrine and a night-soil depôt costing Rs. 800 and Rs. 414 respectively were constructed during the course of the year in this municipality. A certain length of the drain costing Rs. 1,000 was made *pucca* and a number of tube-wells costing Rs. 2,582 were sunk, whilst the construction of some other wells were in progress. As stated in previous reports the most important requirement of this town is an efficient drainage system as some parts of the town become water-logged every year during the rainy season. In Barpeta, the municipal segregation shed and two public latrines are under reconstruction. The municipal bazar site is also being raised at a cost of Rs. 1,095. In Palashbari a road watering cart and a night soil cart were purchased. The Tezpur municipal board made certain lengths of drain *pucca* at a cost of Rs. 1,320 and constructed quarters for the Assistant Supervisor of the water-works. A spur to protect the pumping station at the water-works was constructed at a cost of Rs. 809. Other and very necessary items were, the construction of a slaughter house for small animals at a cost of Rs. 599 and a shed for night-soil and rubbish carts at a cost of Rs. 1,293 whilst a new shed at the municipal market at an estimated cost of Rs. 7,552 is under construction. The pipe water-supply scheme for Mangaldai town has had to be postponed on account of financial stringency. The Jorhat Municipal Board purchased two motor lorries for removal of night-soil at a cost of Rs. 5,923, constructed a garage for the lorries, and sank a tube-well at a cost of Rs. 350. The board has also purchased a few dust bins and made *pucca* platforms for them. Two additional public latrines were constructed by the Golaghat municipal Board. The pipe water-supply scheme for this town has not matured. The Sibsagar Municipal Board purchased a night-soil cart and a number of dust bins and constructed a number of platforms for the latter. The Dibrugarh Municipal Board constructed quarters for sweepers at a cost of Rs. 3,159 and constructed an approach road to the rubbish depôt. The construction of a slaughter house at an estimated cost of Rs. 3,779 and the construction of *pucca* drains in three wards at an estimated cost of Rs. 8,000 are in progress. The water-supply of the town consists of open and in most cases *kutcha* surface wells liable to constant pollution. The question of the improvement of the Dibrugarh water-supply is under consideration, but in view of present financial stringency it is impossible to say when the scheme will materialize. Lorries for conservancy purposes are at work and the system of removal of refuse and night-soil has in consequence been improved to a great extent. In Doom Dooma the drains on both sides of the Kamarpatty road and Assam Trunk Road were made *pucca* at a cost of Rs. 4,025. A length of 580' of drain in another part of the town was made *pucca* at a cost of Rs. 1,086. Some stalls including four *pucca* plinths in the municipal market were constructed at a cost of Rs. 2,443. In Tinsukia the Sunday *hât* was improved at Rs. 4,310 and the daily bazar was provided with *pucca* drains.

Hill Districts.—The Haflong Bazar Fund incurred an expenditure of Rs. 13,442 on sanitary improvements. These were mainly under conservancy, water-supply, anti-malarial measures and pay of sanitary inspectors. The Sadiya Local Fund incurred a total expenditure of Rs. 17,147 mainly under the heads, conservancy, water-supply construction of the market and pay of the sanitary inspector. In Shillong, an incinerator was constructed at Jhalupara at a cost of Rs. 923 and a municipal market was constructed at Laitumkhrah at a cost of Rs. 2,260. The approach road to the Jhalupara trenching ground and improvements to a new incinerator at a cost of Rs. 4,272 were undertaken. Drains in different parts of the town are being gradually improved.

A total expenditure of Rs. 5,864 was incurred by the Public Works Department on the maintenance of water-supply, drainage and town improvements in 1930, as compared with Rs. 31,391 in the preceding year.

SECTION X.

GENERAL REMARKS.

47. The total expenditure of 19 local boards on public health measures during the year amounted to Rs. 2,18,370, as compared with Rs. 2,55,676 in the preceding year.

Village sanitation.

The table below shows the expenditure incurred under different heads of public health in 1930, as compared with that of 1929 :—

| | | | | 1930 Rs. | 1929 Rs. |
|----------------------|-----|-----|-----|-------------|-------------|
| Water-supply | ... | ... | ... | 1,17,822 | 1,39,642 |
| Vaccination | ... | ... | ... | 44,060 | 50,646 |
| Control of epidemics | ... | ... | ... | 19,327 | 40,880 |
| Markets | ... | ... | ... | 11,655 | 11,179 |
| Conservancy | ... | ... | ... | 13,337 | ... |
| Drainage | ... | ... | ... | 1,011 | 86 |
| Other sanitary works | ... | ... | ... | 5,158 | 13,243 |
| Total | ... | ... | ... | 2,18,370 | 2,55,676 |

As in the preceding year, the largest sum, *viz.*, Rs. 1,17,822 was spent on improvements to water-supplies, mainly on the provision of new tanks and wells in areas in which the existing supplies are inadequate and on the maintenance of those existing. In rural areas, the provision of more tanks and wells for domestic purposes is much overdue. Local boards are fully alive to this and are gradually meeting these requirements with the funds at their disposal. Local boards spent 6·85 per cent. of their income on public health measures during the year.

The expenditure on these measures by various local boards was as follows :—

| | | | | | Rs. |
|--------------------------------|-----|-----|-----|-----|--------|
| 1. Dhubri Local Board | ... | ... | ... | ... | 27,545 |
| 2. Nowgong „ „ | ... | ... | ... | ... | 23,132 |
| 3. Gauhati „ „ | ... | ... | ... | ... | 19,852 |
| 4. Dibrugarh Local Board | ... | ... | ... | ... | 17,657 |
| 5. Habiganj „ „ | ... | ... | ... | ... | 15,918 |
| 6. Karimganj „ „ | ... | ... | ... | ... | 11,691 |
| 7. Mangaldai „ „ | ... | ... | ... | ... | 10,663 |
| 8. Tezpur „ „ | ... | ... | ... | ... | 10,497 |
| 9. North Lakhimpur Local Board | ... | ... | ... | ... | 10,373 |
| 10. Barpeta Local Board | ... | ... | ... | ... | 9,749 |
| 11. Jorhat „ „ | ... | ... | ... | ... | 9,462 |
| 12. Sunamganj „ „ | ... | ... | ... | ... | 8,887 |
| 13. Golaghat „ „ | ... | ... | ... | ... | 8,370 |
| 14. North Sylhet Local Board | ... | ... | ... | ... | 7,505 |
| 15. Goalpara Local Board | ... | ... | ... | ... | 6,877 |
| 16. Sibsagar „ „ | ... | ... | ... | ... | 6,291 |
| 17. Maulvibazar Local Board | ... | ... | ... | ... | 5,516 |
| 18. Hailakandi „ „ | ... | ... | ... | ... | 5,319 |
| 19. Silchar „ „ | ... | ... | ... | ... | 3,066 |

Vaccination and revaccination is extensively undertaken in rural areas throughout the cold weather months and also during epidemics in other seasons. Vaccination and revaccination under certain conditions is made compulsory under the provisions of special temporary regulations in villages where opposition is offered owing to superstition and ignorance. Immediately on receipt of information of an outbreak of cholera in a village, an Epidemic Unit sub-assistant surgeon, a supernumerary sub-assistant surgeon or a local board epidemic doctor is immediately deputed for duty in that village. Disinfectant carriers who accompany them, are employed on disinfecting water-supplies. The rules regulating the reporting of epidemics were revised in order to ensure prompt action. Facilities for the intensive treatment of *kala azar* which were introduced some years ago have brought the disease under control. For the treatment of malarial fevers, cheap and pure quinine is available at all post offices. It is sold below cost price in order to bring it within the reach of poor people and cultivators in villages. Quinine and cinchona febrifuge are also supplied free to mala-

ria patients at the general dispensaries. *Kala azar* dispensaries also maintain a stock of these drugs for the treatment of malaria patients. Health propaganda work is carried out in villages throughout the province by the Assistant Surgeons on *kala azar* duty. These officers demonstrate with the aid of magic lanterns, the causes of disease and the precautions necessary to avoid them. Pictorial posters on *kala azar*, cholera, small-pox and the Fly are exhibited in all public places. By these means useful knowledge in hygiene and public health generally is slowly, but surely penetrating the masses. Village authorities, where established, have constructed tanks, wells, drains and roads, cleansed village sites and carried out miscellaneous sanitary improvements according to their financial capabilities.

Sale of quinine.

48. The sub-joined table shows the amount of quinine sold in 1930 as compared with that in 1929 :—

| Districts. | Treatment parcels sold in— | | Difference. | |
|--------------------------------|----------------------------|-------|-------------|-----------|
| | 1930. | 1929. | Increase. | Decrease. |
| 1 | 2 | 3 | 4 | 5 |
| Cachar | 657 | 817 | ... | 160 |
| Sylhet | 1,496 | 1,405 | 91 | ... |
| Goalpara | 640 | 629 | 11 | ... |
| Kamrup | 736 | 598 | 138 | ... |
| Darrang | 548 | 538 | 20 | ... |
| Nowgong | 461 | 305 | 156 | ... |
| Sibsagar | 700 | 422 | 278 | ... |
| Lakhimpur | 358 | 297 | 61 | ... |
| Khasi and Jaintia Hills | 319 | 317 | 2 | ... |
| Naga Hills | 70 | 50 | 20 | ... |
| Lushai Hills | 1,902 | 1,823 | 79 | ... |
| Garo Hills | 36 | 51 | ... | 15 |
| Sadiya Frontier Tract | 83 | 55 | 28 | ... |
| Manipur State | 78 | 41 | 37 | ... |
| Total | 8,084 | 7,338 | 746 | ... |

The total number of parcels of quinine treatments sold during the year was 8,084 as compared with 7,338 in 1929, showing an increase of 746. Each treatment is made up of 20 four grain tablets of sulphate of quinine. Ten such treatments make up a parcel, which is the minimum amount issued to an agent for retail sale. The increase in sales is due to the prevalence of malaria in Kamrup, Nowgong, Sibsaagar, Lakhimpur and Lushai Hills districts. As in the preceding year, the drug was sold below cost price at four annas and six pies per treatment.

49. Public health propaganda was carried out on the same lines as in previous years with the exception that pamphlets were not supplied to primary schools and grants were not given for prizes to pupils and teachers owing to financial stringency. Assistant Surgeons on *Kala azar* duty in the course of their tours of inspection of dispensaries gave 550 demonstrations and lectures at which approximately 37,453 people attended. Demonstrations and lectures given were on those diseases which are prevalent in Assam and also on Maternity, Child-Welfare and other public health matters. In Sylhet, the Social Service League gave 263 demonstrations in various parts of the district and at which approximately 8,000 people attended. The Public Health Department contributed a

grant of Rs. 1,000 to the activities of this league, which includes medical relief and the training of *dhais* in addition to general public health propaganda. Demonstrations and lectures were appreciated by those for whom they were intended.

50. A system of medical inspection of schools was introduced during the year.

School hygiene.

Assistant Directors of Public Health in the course of their inspections of vaccination, *kala azar* and epidemic duties, inspect schools of all classes. Their inspection is confined to the general sanitary condition of schools as regards site, ventilation, latrine and urinal accommodation and the vaccinal condition of scholars. They also deliver short addresses on preventible diseases and personal hygiene. Defects detected are communicated to the Director of Public Instruction, Assam, for any action he may consider necessary.

51. No important fair or *mela* is held in Assam. Some details of few of those

Pilgrim traffic and fairs.

that are held are given below :—

Sidheswar *mela*, Hailakandi cattle show and Bhuban Hill *mela* were, as usual, held in the Cachar district. The number of people assembled at these *melas* varied from 8,000 to 15,000. The first named *mela* lasted for a fortnight, the second 4 days and the third 2 days. Necessary sanitary precautions were taken and no epidemic was reported from any of them. The Darranga fair was held as usual in the Kamrup district. One of the Epidemic Unit sub-assistant Surgeons with two disinfectant carriers was deputed to the *mela* to supervise the general sanitation and hygienic condition of the place. There was no outbreak of any epidemic. There was a big gathering of pilgrims in the Kamakhya hill in this district on the occasion of the Hindu festival "Ambubachi" in June. A temporary dispensary was provided in the fair area. The fair lasted for five days. There was a complete absence of any epidemic disease and only 21 persons were treated for ordinary complaints. A gathering of about 12,000 pilgrims took place for a day near Dhubri town during Brahmaputra *snan* (bathing) on the *ashtami* day. Temporary latrines were constructed and filtered water was supplied. The Assistant Surgeon, sadar, two sub-assistant surgeons and the Health Officer were deputed to look after sanitary arrangements. No epidemic was reported. Parasuram *mela* was held as usual in Sadiya Frontier Tract. No epidemic occurred amongst pilgrims.

52. There was no railway line under construction by the Assam-Bengal Railway

Railway coolie camp.

in Assam during the year. The construction of the Tangla-Belsiri-Rangapara railway line by the Eastern Bengal Railway was begun on the 20th November 1930. The average number of coolies employed was 1,200. No conservancy arrangements were made, the fields and jungle being used for the purposes of nature. Stream water, which was boiled, was used for domestic purposes. No infectious disease was reported in any of the coolie camps. Out of a total of 1,142 cases of sickness treated 723 were for malaria.

53. The following table shows the work done in the Public Health Laboratory

Public Health Laboratory. in 1930 as compared with that of the preceding year :—

| | 1930 | 1929 |
|---|-------|-------|
| Chemical analysis of water | 130 | 78 |
| " " of milk | 228 | 213 |
| " " of ghee | 87 | 68 |
| " " mustard oil | 73 | 84 |
| " " tea and tea dust | 7 | 126 |
| " " other food stuffs | 24 | 14 |
| Miscellaneous chemical analysis | 7 | 2 |
| Bacteriological examination of water | 305 | 257 |
| Bacteriological examination of vaccine lymph | 303 | 343 |
| Miscellaneous microscopical examination of blood films, etc. | 7 | 105 |
| Antiseptics and larvicides | 1 | 5 |
| Total | 1,172 | 1,295 |

Out of 228 samples of milk, 73 of mustard oil and 87 of ghee analysed chemically in the Public Health Laboratory at Shillong, 108, 15 and 62 respectively were found to have been adulterated, giving a percentage of 47·37, 20·54 and 71·26 respectively. Thirty-one samples of tea, *atta*, flour, *suji*, turmeric and butter were analysed and 8 of them were found to have been adulterated. All municipal boards should take greater advantage of the facilities provided for the analysis of food-stuffs and send more samples which they suspect are adulterated. A total of 305 samples of water were examined bacteriologically during the year. They were mostly of pipe water from municipalities. All municipal water supplies are chlorinated except that of Shillong. Of 70 samples of Shillong water analysed at different times, lactose fermentors were found in 24. These were mostly in the months of July, August and September. The Silchar water collected in November, Sylhet water in July, Tezpur water in February and Dhubri water in August and December showed signs of contamination. All the three samples of Haflong water analysed during the year were contaminated and indicated defects in the method of chlorination. The Murarichand College water was examined twice and signs of contamination were noticed in the sample analysed in July. Waters from Gauhati and Jorhat were found to be good throughout the whole year. Water from one tea estate was collected on two occasions and on each occasion it was found to be excellent. Of the 75 samples of tube-well water analysed—20 from Habiganj, 4 from Maulvi Bazar, 3 from Dibrugarh, 10 from Dhubri, 37 from Gauhati and one from Chhoygaon in the Kamrup district, 49 samples were found to be contaminated. A total of 130 samples of water were analysed chemically and 14 of them were declared to be unsafe. The laboratory continued to be utilised as a distributing depôt for the supply of Urea Stibamine, syringes and their spare parts, etc., used in the treatment of *kala azar*. Dr. Sarat Sasi Kundu, M.B., held charge of the Laboratory throughout the year with commendable success.

Immigration. 54. The number of immigrants to Assam by different routes was as follows :—

| | | | | |
|---|-----|-----|-----|--------|
| <i>Via</i> Naihati, Santahar and Amingaon | ... | ... | ... | 57,847 |
| <i>Via</i> Chandpur to Assam Valley | ... | ... | ... | 4,520 |
| <i>Via</i> Chandpur to Cachar and Sylhet | ... | ... | ... | 4,366 |
| Total | ... | ... | ... | 66,733 |

There were 11 cases of sickness due to cholera, diarrhœa and other causes amongst immigrants who entered Assam *via* Naihati, Santahar and Amingaon. They were admitted to the Railway hospital at Naihati for treatment. There was one death from cholera and one from fever. The rest were cured and discharged. There were 27 admissions from among immigrants to the Goalundo Ghat hospital. All of them were cured and discharged.

Sick coolies treated in the Immigration hospitals at Gauhati and Tezpur were as follows :—

| — | | | | | | Gauhati. | Tezpur. |
|----------------|-----|-----|-----|-----|-----|----------|---------|
| 1 | | | | | | 2 | 3 |
| Cholera | ... | ... | ... | ... | ... | 3 | ... |
| Influenza | ... | ... | ... | ... | ... | 58 | 9 |
| Small-pox | ... | ... | ... | ... | ... | 6 | 1 |
| Chicken-pox | ... | ... | ... | ... | ... | 7 | ... |
| Measles | ... | ... | ... | ... | ... | 15 | ... |
| Malaria | ... | ... | ... | ... | ... | 34 | 1 |
| Conjunctivitis | ... | ... | ... | ... | ... | 77 | ... |
| Other diseases | ... | ... | ... | ... | ... | 64 | 17 |
| Total | | | | | | 264 | 28 |

As in the previous year names, etc., of the cases of conjunctivitis admitted in the Gauhati hospital were brought to the notice of the Tea Districts Labour Association. It was suggested to the Association that immigrants showing signs of conjunctivitis should be detained for treatment in the recruiting depôts. Coolie carriages on the Assam-Bengal Railway were met and inspected at Kulaura station by the sub-assistant surgeon in charge of the local dispensary. Coolies travelling by the Eastern Bengal railway route are examined at the Tea Districts Labour Association's depôt at Gauhati by the sub-assistant surgeon in charge of the Emigration hospital at that place. Managers of certain tea gardens were advised to have leper *sirdars*, and *sirdarnis*, who were sent to recruit, treated for leprosy before they were readmitted to the gardens.

55. I held charge of the Department throughout the year. During January and February I inspected *kala azar* operations and district vaccination work in the Sibsagar, Lakhimpur and Kamrup districts. In July I inspected the municipalities of Gauhati, Nowgong and Jorhat. In October I inspected the Dibrugarh Municipality and Doom Dooma small town; in November the Silchar Municipality; in December *kala azar* operations and vaccination work in the Kamrup and Goalpara districts.

Dr. P. Gupta held the post of the Assistant Director of Public Health, Assam Valley Division, during the entire year.

In January he visited one *kala azar* ward, 4 *kala azar* dispensaries, 4 *kala azar* out-centres and 5 local board dispensaries in the district of Darrang and one *kala azar* dispensary in the district of Kamrup. In addition he inspected 1,086 vaccination operations in 48 villages of the Mangaldai subdivision and 1,164 vaccination operations in 64 villages of the Tezpur subdivision in the district of Darrang. He also inspected 655 vaccination operations in 32 villages of the North Lakhimpur subdivision in the district of Lakhimpur and 573 vaccination operations in 21 villages of the Gauhati subdivision of the Kamrup district. He also visited cholera infected villages in the Mangaldai subdivision, going from house to house giving useful instruction to the villagers. He took necessary steps to bring the epidemic under control and also induced villagers to take inoculations.

In February he visited 8 *kala azar* dispensaries, 5 local board dispensaries and one *kala azar* hospital in the districts of Kamrup, Goalpara, Garo Hills and Nowgong. He inspected 84 vaccination operations in 3 villages of the Gauhati subdivision, 936 vaccination operations in 67 villages of the Garo Hills district, 1,789 vaccination operations in 22 villages of the Goalpara subdivision and 729 vaccination operations in 17 villages of the district of Nowgong. In addition he surveyed a few villages in the districts of Goalpara and Garo Hills and detected some suspected cases of *kala azar*.

In March he visited five *kala azar* dispensaries, 3 *kala azar* out-centres and 3 local board dispensaries in the districts of Nowgong and Sibsagar. He inspected the Golaghat High School. In addition he inspected 457 vaccination operations in 23 villages of the district of Nowgong, 419 vaccination operations in 22 villages of the Golaghat subdivision, 918 vaccination operations in 18 villages of the Jorhat subdivision and 594 vaccination operations in 23 villages of the Sibsagar subdivision in the Sibsagar district.

In April he was deputed to the Garo Hills district and toured there continuously till the 21st April 1930 assisting the Civil Surgeon in organising *kala azar* surveys of that district. He visited the principal villages in each *elaka* and inspected all the existing dispensaries of that district, *viz.*, Bagmara, Dalu, Mohendraganj, Bajingdoba and Dinadubi, and in addition selected sites for in-door *kala azar* wards at Bagmara, Dalu and Mohendraganj and the new dispensary to be opened at Fulbari.

In May he remained at headquarters and did office work.

In June he went with the Public Health Engineer, Assam, to Abhoyapuri, the headquarters of the Bijni Ward's Estate in the district of Goalpara, with a view to seeing what steps were necessary to revive the dead Kujia river. In July he went to Dhubri and after receiving information from the Deputy Commissioner and the Civil Surgeon, Goalpara, regarding the unhealthiness of Sidli and Gossaingaon he proceeded to these places and instituted enquiries into the unhealthiness of these two circles. He undertook preliminary investigations and found that both the places were malarial, and submitted reports to me.

In August he was deputed to the Khanapara Cattle Farm in the district of Kamrup and to Nongpoh in the district of Khasi and Jaintia Hills to investigate into and report on the cause of unhealthiness of both the places.

In September he went to Nongpoh with the Public Health Engineer in connection with a drainage scheme for that place.

In October he remained at headquarters.

In November he again went with the Public Health Engineer Assam, to Abhoyapuri in connection with the revival of the dead Kujia river. He inspected 3 *kala azar* dispensaries, 1 *kala azar* out centre, 2 local board dispensaries and 1 *kala azar* ward in the district of Goalpara. He organised and supervised the measures undertaken to control the cholera epidemic prevailing in that district during this month, visiting the Chonari area and supervising the work of the sub-assistant surgeons deputed to cholera duty. He also inspected 2,071 vaccination operations in 33 villages of the Goalpara subdivision in the district of Goalpara.

In December he supervised the work of the entire staff deputed to cholera duty in the district of Goalpara. He visited the cholera infected areas of Goalpara and Dhubri towns and induced people to take inoculation. He visited 12 dispensaries in the district of Goalpara. He also inspected 32 vaccination operations in two villages of the Dhubri subdivision.

Dr. S. H. Paul held the post of Assistant Director of Public Health, Surma Valley and Hill Division, during the entire year.

In January he inspected 2 charitable dispensaries and one high school and also inspected 867 vaccination operations in Cachar district. He inspected the municipality of Silchar and examined 310 children in the Cachar district and found 34 with enlarged spleen. Accompanied by the Civil Surgeon he went round the Civil Police and Military lines, Silchar, with reference to the Inspector General of Civil Hospitals' inspection report and discussed the adoption of anti-mosquito measures there. He also inspected the site of the Bhujan Hill *Mela* of Cachar, a detailed report of which was subsequently submitted. He inspected the *kala azar* work of 3 local board dispensaries and 2 sub-centres; one Middle English School and 527 vaccinations in Sylhet district; the site of the South Sylhet Agricultural and Industrial Exhibition grounds, and delivered a lecture on malaria. He visited one of the villages under the Kulaura dispensary area and detected several suspected cases of *kala azar* directing them to attend the centre for diagnostic purposes. He examined 60 children in Sylhet district and found three with enlarged spleen.

In February he inspected 6 local board and 4 *kala azar* dispensaries, 7 Middle English Schools and 1 Primary School in the Sylhet district and delivered short addresses to the teachers, boys and villagers present. He inspected 1,345 vaccinations in the Sylhet district, examined the spleens of 85 children, finding 8 to have enlargement.

In March he inspected 2 *kala azar* and 6 local board dispensaries, 2 High and 10 Middle English Schools and gave short addresses on preventible diseases and also inspected 2,220 vaccinations in Sylhet and Cachar districts. He inspected one bazar and visited the Sidheswar *Mela* ground in connection with the arrangements for the Baruni *Mela*.

In April he inspected 4 *kala azar* and 4 local board dispensaries, one sub-centre, 3 High and 2 Middle English Schools and delivered short addresses on preventible diseases. He inspected the Sunamganj municipality and also 604 vaccinations in the Sylhet district. He visited one cholera infected village and attended the Basudev Bari *Mela*. He inspected one bazar at Ohhatak and destroyed some rotten fruit exposed for sale. He consulted with the Inspector of Schools with reference to the conference of teachers and gave him his views regarding health propaganda work in schools. He held an enquiry into the conduct of sub-assistant surgeon, Beani Bazar dispensary, at the request of the Civil Surgeon, Sylhet. He met the Chairman, Ohhatak Village Authority, and discussed sanitary matters relating to the Ohhatak Bazar.

In May he inspected 2 local board dispensaries, 3 Middle English Schools and 416 vaccinations in Sylhet and Cachar districts; examined the spleens of 116 children and detected 13 with enlargement; inspected Maulvibazar municipality and the sanitation and anti-malaria work of Haflong town. He also visited the Railway and Government dispensaries at Haflong in order to ascertain the prevalence of malaria. He

visited small-pox and cholera infected villages and induced people to take inoculation in his presence; attended the scientific sessions of the Provincial Medical Licentiate's Conference held at Silchar and also attended the Child-Welfare and Maternity Exhibition; checked the vaccination registers of Silchar Municipality, and found that 92 children over 1 year were still unprotected.

In June he inspected 4 *kala azar*, 3 local board dispensaries, 2 Middle English Schools in Sylhet district, inspected the municipalities of Habiganj and Karimganj and inspected 141 vaccinations in the Sylhet district.

In July he inspected the Sylhet Municipality, and also 3 *kala azar*, 2 local board dispensaries, and 3 Middle English Schools in the Sylhet district. He inspected 38 vaccinations, surveyed 1 village in Sunamganj for *kala azar*, as well as detecting 56 children under 10 years of age unprotected against small-pox in that village. He examined 144 children and found 10 with enlarged spleens; consulted with the Chairman of Gourarong and Deraï village authorities and advised them regarding sanitary matters, and inspected Pagla Bazar and destroyed some rotten fruit and sweetmeats exposed for sale.

In August he visited Kohima and went round the town with the malaria gang inspecting anti-malaria operations and searching for new breeding places of the anopheles mosquitoes. He consulted with the Deputy Commissioner, Civil Surgeon and the Commandant, Assam Rifles, regarding the possibility of anti-malaria operations. He inspected one middle English school at Kohima and also the *kala azar* work of Dimapur charitable dispensary. He inspected 3 local board and 3 *kala azar* dispensaries in the Sylhet district as well as 2 Middle English schools. In September he inspected 4 local board and 3 *kala azar* dispensaries, 2 High and 2 Middle English schools in the Sylhet district and delivered short addresses on the preventible diseases and personal hygiene. He arranged the deputation of the sub-assistant surgeons to cholera infected areas, supervising and checking their work in the Habiganj subdivision. He visited almost all the cholera infected areas and gave the villagers necessary advice and in many places helped the sub-assistant surgeons with their inoculations.

In October he consulted the Subdivisional Officer, Habiganj, and requested him to arrange for the early notification of cholera cases by village chaukidars. He supervised and inspected the cholera operations proceeding in the Habiganj subdivision. He had a consultation with the Deputy Commissioner, Sylhet, with reference to the desirability of the earliest possible notification of epidemic diseases by chaukidars and Assistant sarpanches. He was on casual leave from 12th to 25th.

In November he received private information regarding an outbreak of cholera in Sylhet town, and in company with the Civil Surgeon went round all the infected areas. The Civil Surgeon deputed all the epidemic staff available to work directly under the Assistant Director. He arranged for the proper disposal of infected material and the disinfection of infected houses. He arranged the work amongst all the available officers and seized rotten fruit and sweets and had them destroyed. He inspected the fish market and advised the Chairman of the municipality regarding preventive measures to be adopted. He induced people to take inoculation and help the sub-assistant surgeon in giving cholera inoculations. He inspected the cholera infected areas in the sadar and Karimganj subdivisions and arranged the deputation of sub-assistant surgeons to suitable areas. He inspected 4 *kala azar* and 6 local board dispensaries and also inspected 943 vaccinations in the Sylhet district. He examined 411 children and found 36 with enlarged spleens.

In December he inspected 4 local board and one *kala azar* dispensary, inspected 261 vaccinations in the Sylhet district and examined 61 children and found 7 with enlarged spleens. He went to Sunamganj and supervised the cholera epidemic in that subdivision, visiting almost all the affected houses and giving necessary instruction to house holders. He arranged with the Chairman, Sunamganj Local Board to arrange for an adequate supply of cholera vaccine for the Tahirpur area where the work was suffering for lack of sufficient supplies.

I am indebted to both my Assistant Directors of Public Health for the energetic and zealous manner in which they have worked throughout the year.

In conclusion, I have to thank my entire office staff for the excellent manner in which they have carried out their duties. My special thanks are due to my Personal

Assistant Babu Chandra Nath Halder and my Head Clerk Babu Iswar Chandra Das. They have both been indefatigable in the performance of their duties and have proved themselves most reliable and able subordinates.

T. D. MURISON, *Lieut.-Colonel, I. M. S.,*
Director of Public Health, Assam.

SECTION XI.

ANNUAL REPORT OF THE PUBLIC HEALTH ENGINEER AND THAT OF THE PUBLIC HEALTH BOARD FOR THE YEAR 1930.

Annual report of the Public Health Engineer, Assam. 56. The following towns were visited by the Public Health Engineer, Assam, in connection with water-supply :—

Gauhati.—Gauhati was visited between December 27th, 1929 and January 5th, 1930, for general inspection and a study of the scheme for re-modelling the water-supply.

I again visited Gauhati on May 28th, 1930 in company with the Director, Pasteur Institute, to consider the question of coagulation and chlorination. The municipality has now fitted up a temporary apparatus for carrying out coagulation tests. This will be put into operation during this coming monsoon. The half yearly machinery inspection was carried out by Messrs. Worthington-Simpson on June 26th, 1930. The results of the inspection are contained in the firm's report dated June 1930.

I carried out further investigation in connection with coagulation and chlorination from September 18th to 21st, as a result of which the abovementioned temporary apparatus has been fixed.

The municipality board placed a contract with Messrs. Siemens (India), Limited, for Rs. 17,575, for the supply and erection a two stage vertical centrifugal pump, normal output 37,800 G.P.H. belt driven by a vertical double cylinder Diesel engine, normal output 70 B.P.H.

The erection of this plant was commenced in March 1931 and is still in progress.

Bacteriological analysis of Gauhati water has shown satisfactory results this year.

Mangaldai.—I visited Mangaldai on January 24th, 1930 in connection with a proposed water-supply from a 5" tube-well which has been sunk there, but for want of funds the water-supply has not materialised this year.

Tezpur.—I inspected Tezpur water-works on January 27th and 28th, 1930. Investigation and rectifying of leakages were carried out during the year. Up to December 1930 this work has in progress and leakage on some lines had been stopped. No further report has been received.

I visited Tezpur again in May 1930 under special orders from Government to investigate the alternative of an efficient water-supply for the Jail and Mental Hospital from the municipal supply and an independent supply. The results are contained in report dated June 7th, 1930.

I again visited Tezpur in company with Messrs. Worthington-Simpson's representative on June 26th, 1930, in connection with the half-yearly machinery inspection. The results of the inspection are contained in the firm's report dated June 1930.

In November 1930, I submitted a preliminary estimate to Government for an independent supply to the Jail and Mental Hospital amounting to Rs. 37,275.

Bacteriological analysis of Tezpur water has shown satisfactory results this year.

Jorhat.—I inspected Jorhat water works from January 30th to February 1st, 1930 and again from June 29th to July 1st, 1930 with Messrs. Worthington-Simpson's representative in connection with the half-yearly machinery inspection.

The results of the inspection are contained in the firm's report dated June 1930.

Bacteriological analysis of Jorhat water has shown satisfactory results this year.

Dibrugarh.—I paid a visit to Dibrugarh from March 10th to 15th, 1930 in connection with the scheme for a proposed water-supply drawn up by Messrs. Scott

and Saxby. A test was carried out on the 5" diameter tube-well in the municipal compound from September 2nd to 12th, 1930. The yield varied under different conditions of test from 5,700 to 10,400 G. P. H. The depth of the well is 227' 2" and during the tests no sand came in.

Bacteriological analysis of samples taken during the test gave unsatisfactory results, but further analysis have shown the water to be excellent. The contract for carrying out the test was given to Messrs. Scott and Saxby of Calcutta and amounted to Rs. 1,109.

A preliminary estimate has been submitted to Government for a complete water-supply scheme at a cost of Rs. 4,60,000.

Sylhet.—I inspected Sylhet water-works on March 17th and 18th, 1930 and again in company with Messrs. Worthington-Simpson's representative on July 4th, 1930 in connection with the half-yearly machinery inspection. The result of the inspection is contained in the firm's report dated July 1930.

During the year the municipal board carried out pressure tests. The results of these tests have shown that the system is overworked and if possible, I intend visiting Sylhet this season to carry out flow tests to ascertain from which points the demand is excessive.

A Jewell chlorinator was installed this year and the latest report dated 20th October 1930 states that it is working satisfactorily.

Bacteriological analysis has shown variations in the quality of the water this year.

Silchar.—I inspected Silchar water-works on March 19th—21st, 1930 and again in company with Messrs. Worthington-Simpson's representative on July 2nd, 1930 in connection with the half-yearly machinery inspection. The results of the inspection are contained in the firm's report dated July 1930.

With the exception of one report the bacteriological analysis has shown good results this year.

Shillong.—In March 1930, I scrutinized a scheme for the re-organization of the Shillong water-supply. This I approved, except that a question was raised as to whether there was a sufficient supply of water from the sources during the dry season. This question has now been investigated and satisfactorily settled.

I also investigated the possibilities of a supply from the municipal mains to Nongthymmai and Pynthor Umkhrak.

Arrangements were made with the Director of Public Health to take regular monthly samples of water from the Wahjalyinnoh source from December 1930; all samples analysed show a high degree of purity.

Maulvi Bazar.—I visited Maulvi Bazar in May 1930. There are four small tube-wells similar to those at Habiganj. At the time I visited no analysis of these well waters had ever been carried out, but I have received a report of water collected in December 1930; two wells show satisfactory results and two unsatisfactory. I submitted a rough estimate in June 1930 for a pipe water-supply scheme to cost Rs. 70,000; this the board considered was beyond their means and the position now is the same as at Habiganj.

Hatigani.—I inspected the water-supply from small tube-wells on May 8th and 9th, 1930.

Altogether there are 11 tube-wells all 1½" diameter with hand pumps.

Bacteriological analysis of water from all these wells have continually been unsatisfactory and the question of how to provide a satisfactory safe water-supply is under consideration.

Dhubri.—Dhubri water-works was visited on March 7th, 8th and again on June 24th and 25th, 1930 in company with Messrs. Worthington-Simpson's representative in connection with the half-yearly machinery inspection. Details of the inspection are contained in the Company's report dated 25th June 1930.

The important references are one new engine required and one new valve chamber is to be renewed on low lift pump No. 1.

No information has been received to say that these two items have been attended to.

I arrived in Dhubri on July 17th, 1930 to rectify the damage done to the water-works by the earthquake of July 3rd, 1930. The municipal board repaired the damage done with their own staff between July 17th, and August 8th, 1930. The

repairs were carried out under my personal supervision. Full details of the work carried out are contained in Public Health Engineer's report dated 9th August 1930, and memorandum No. 64-65 T., dated August 9th, 1930.

Bacteriological analysis of Dhubri water has shown satisfactory result this year.

The following applications for water-supply schemes have been received, but there has been no time to attend to them this year :—

1. Chunarighat Police Station.
2. Goalpara Police station.
3. Agricultural residences, Borbhetta.
4. Aijal.
5. Reserve lines, Silchar.
6. Murarichand College Hostel, Sylhet.
7. Golaghat.
8. Golaghat Circuit House.
9. Pasighat.

DRAINAGE.

Abhayapuri.— My first visit to Abhayapuri was in connection with the revival of the dead Kujia River from June 10th to 14th, 1930. I pointed out in my report to Government dated 19th June, 1930 that this was a matter for a river-training expert.

My next visit was from November 4th to 5th. This visit was in connection with a drainage scheme for the town.

I arranged with the Estate Manager to carry out a survey ; this has not yet been received.

Silchar.—Silchar Municipal Board submitted a drainage scheme for scrutiny. This has been returned to them together with my report dated 5th September 1930. The matter is now pending with the municipal board.

The following applications for preparation of drainage schemes have been received, but there has been no time to attend to them this year :—

1. Karimganj.
2. Goalpara.
3. Jorhat.
4. Nongpoh (Survey to be undertaken).
5. Maulvi Bazar.
6. Sylhet Technical School.

The following preliminary estimates were prepared during the year under report.

| Water-supply. | | | | Value of the estimate. | |
|----------------------------------|-----|-----|-----|------------------------|----------|
| | | | | | Rs. |
| Maulvi Bazar | ... | ... | ... | ... | 70,000 |
| Jail and Mental Hospital, Tezpur | ... | ... | ... | ... | 37,275 |
| Dibrugarh | ... | ... | ... | ... | 4,60,000 |

A. F. HILLEN,

Public Health Engineer, Assam.

57. There was no meeting of the board during the year. The Health Board (Epidemics) functioned as in the previous year.
Annual Report of the Public Health Board.

T. D. MURISON,
Lieut.-Colonel. I.M.S.,
Secretary, Public Health Board.
Assam.

J. P. CAMERON, *Colonel I.M.S.,*
President, Public Health Board, Assam.

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IMPERIAL STATEMENT No. I.—Statement showing the births

| No. | Districts. | | | | Population according to the Census of 1921. | | | Number of births registered. | | |
|---------------|------------------------|-----|-----|-----|---|-----------|-----------|------------------------------|---------|---------|
| | | | | | Male. | Female. | Total. | Male. | Female. | Total. |
| 1 | 2 | | | | 3 | 4 | 5 | 6 | 7 | 8 |
| SURMA VALLEY. | | | | | | | | | | |
| 1 | Cachar | ... | ... | ... | 261,594 | 238,890 | 500,484 | 8,460 | 7,931 | 16,391 |
| 2 | Sylhet | ... | ... | ... | 1,308,734 | 1,232,607 | 2,541,341 | 41,570 | 39,297 | 80,867 |
| | Total | ... | ... | ... | 1,570,328 | 1,471,497 | 3,041,825 | 50,030 | 47,228 | 97,258 |
| ASSAM VALLEY. | | | | | | | | | | |
| 3 | Goalpara | ... | ... | ... | 406,628 | 355,895 | 762,523 | 14,069 | 13,150 | 27,219 |
| 4 | Kamrup | ... | ... | ... | 397,267 | 365,404 | 762,671 | 10,442 | 10,009 | 20,451 |
| 5 | Darrang | ... | ... | ... | 252,849 | 224,593 | 477,442 | 7,938 | 7,435 | 15,373 |
| 6 | Nowgong | ... | ... | ... | 208,731 | 189,276 | 398,007 | 6,443 | 6,130 | 12,573 |
| 7 | Sibsagar | ... | ... | ... | 433,913 | 389,284 | 823,197 | 12,368 | 11,805 | 24,173 |
| 8 | Lakhimpur | ... | ... | ... | 312,843 | 273,734 | 586,577 | 9,110 | 8,678 | 17,788 |
| | Total | ... | ... | ... | 2,012,231 | 1,798,186 | 3,810,417 | 60,370 | 57,207 | 117,577 |
| | Total for the province | ... | ... | ... | 3,582,559 | 3,269,683 | 6,852,242 | 110,400 | 104,435 | 214,835 |

IMPERIAL STATEMENT No. II.—Statement showing the births and deaths

| No. | Districts. | Area, in square miles. | Average population per square mile. | Population (Census of 1921). | | | Births. | | Number of deaths registered. | | |
|---------------|------------------------|------------------------|-------------------------------------|------------------------------|-----------|-----------|---------------|---------------------------------|------------------------------|---------|---------|
| | | | | Male. | Female. | Total. | Total number. | Births per 1,000 of population. | Male. | Female. | Total. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| SURMA VALLEY. | | | | | | | | | | | |
| 1 | Cachar | 1,859 | 269 | 261,594 | 238,890 | 500,484 | 16,391 | 32.75 | 5,593 | 5,437 | 11,030 |
| 2 | Sylhet | 5,388 | 472 | 1,308,734 | 1,232,607 | 2,541,341 | 80,867 | 31.82 | 29,701 | 26,607 | 56,308 |
| | Total | 7,247 | 419 | 1,570,328 | 1,471,497 | 3,041,825 | 97,258 | 31.97 | 35,294 | 32,044 | 67,338 |
| ASSAM VALLEY. | | | | | | | | | | | |
| 3 | Goalpara | 3,954 | 193 | 406,628 | 355,895 | 762,523 | 27,219 | 35.70 | 10,480 | 8,539 | 19,019 |
| 4 | Kamrup | 3,863 | 197 | 397,267 | 365,404 | 762,671 | 20,451 | 26.81 | 6,628 | 6,106 | 12,734 |
| 5 | Darrang | 2,916 | 164 | 252,849 | 224,593 | 477,442 | 15,373 | 32.20 | 5,834 | 5,469 | 11,303 |
| 6 | Nowgong | 3,699 | 108 | 208,731 | 189,276 | 398,007 | 12,573 | 31.59 | 3,943 | 3,698 | 7,641 |
| 7 | Sibsagar | 5,097 | 162 | 433,913 | 389,284 | 823,197 | 24,173 | 29.36 | 7,491 | 7,292 | 14,783 |
| 8 | Lakhimpur | 3,910 | 143 | 312,843 | 273,734 | 586,577 | 17,788 | 20.32 | 7,093 | 6,468 | 13,561 |
| | Total | 23,439 | 162 | 2,012,231 | 1,798,186 | 3,810,417 | 117,577 | 30.86 | 41,469 | 37,812 | 79,281 |
| | Total for the province | 30,686 | 223 | 3,582,559 | 3,269,683 | 6,852,242 | 214,835 | 31.35 | 76,763 | 69,866 | 146,619 |

registered in the districts of Assam during the year 1930.

| Ratio of births per 1,000 of population. | | | Number of males born to every 100 females born. | Excess of births over deaths per 1,000 of population. | Excess of deaths over births per 1,000 of population. | Mean ratio of births per 1,000 during the previous five years. | | |
|--|---------|--------|---|---|---|--|---------|--------|
| Male. | Female. | Total. | | | | Male. | Female. | Total. |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 16.90 | 15.85 | 32.75 | 107 | 10.71 | ... | 17.97 | 16.84 | 34.82 |
| 16.36 | 15.46 | 31.82 | 106 | 9.66 | ... | 16.50 | 15.23 | 31.73 |
| 16.44 | 15.53 | 31.97 | 106 | 9.83 | ... | 16.74 | 15.49 | 32.23 |
| 18.45 | 17.25 | 35.70 | 107 | 10.36 | ... | 18.61 | 17.47 | 36.07 |
| 13.69 | 13.12 | 26.81 | 104 | 10.11 | ... | 14.98 | 14.04 | 29.02 |
| 16.63 | 15.57 | 32.20 | 107 | 8.53 | ... | 15.25 | 14.55 | 29.80 |
| 16.19 | 15.40 | 31.59 | 103 | 12.39 | ... | 14.86 | 13.59 | 28.45 |
| 15.02 | 14.34 | 29.36 | 105 | 11.40 | ... | 14.10 | 13.13 | 27.23 |
| 15.53 | 14.79 | 30.32 | 105 | 7.30 | ... | 17.54 | 13.91 | 26.65 |
| 15.84 | 15.01 | 30.86 | 106 | 10.05 | ... | 15.31 | 14.40 | 29.72 |
| 6.11 | 15.24 | 31.35 | 106 | 9.95 | ... | 15.94 | 14.89 | 30.83 |

registered in the districts of Assam during the year 1930.

| Number of deaths of males to every 100 deaths of females. | Deaths per 1,000 of population from— | | | | | | | | | | | Mean ratio of deaths per 1,000 during the previous five years. | | |
|---|--------------------------------------|------------|---------|--------|--------------------------|-----------------------|-----------|-------------------|-------------|---------|--------|--|---------|--------|
| | Cholera. | Small-pox. | Plague. | Fever. | Dysentery and Diarrhoea. | Respiratory diseases. | Injuries. | All other causes. | All causes. | | | Male. | Female. | Total. |
| | | | | | | | | | Male. | Female. | Total. | | | |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 103 | 16 | 06 | ... | 11.15 | 2.36 | 1.85 | 26 | 6.19 | 21.38 | 23.76 | 22.04 | 21.74 | 23.20 | 22.44 |
| 112 | 1.48 | 05 | ... | 11.53 | 1.22 | 0.53 | 30 | 7.03 | 22.69 | 21.59 | 22.16 | 24.59 | 23.47 | 24.05 |
| 110 | 1.27 | 11 | ... | 11.47 | 1.41 | 0.76 | 30 | 6.90 | 22.48 | 21.78 | 22.14 | 24.12 | 23.43 | 23.79 |
| 119 | 1.52 | 04 | ... | 21.42 | 0.39 | 0.17 | 23 | 0.87 | 25.77 | 24.84 | 25.34 | 28.37 | 26.13 | 27.32 |
| 109 | 1.21 | 30 | ... | 11.39 | 0.69 | 0.35 | 23 | 2.02 | 16.68 | 16.91 | 16.70 | 19.04 | 19.21 | 19.43 |
| 107 | 0.41 | 17 | ... | 15.70 | 1.78 | 1.36 | 30 | 3.96 | 23.07 | 24.35 | 23.67 | 23.24 | 24.76 | 23.95 |
| 107 | 0.13 | 003 | ... | 15.22 | 0.70 | 0.48 | 25 | 2.42 | 18.69 | 19.54 | 19.20 | 19.87 | 19.19 | 19.54 |
| 103 | 0.12 | 03 | ... | 10.39 | 2.29 | 1.33 | 25 | 3.55 | 17.26 | 18.73 | 17.96 | 17.61 | 18.31 | 17.94 |
| 111 | 0.10 | 09 | ... | 12.58 | 2.41 | 2.11 | 25 | 5.19 | 22.67 | 23.41 | 22.02 | 19.66 | 20.00 | 19.82 |
| 110 | 0.05 | 28 | ... | 14.40 | 1.38 | 0.94 | 27 | 2.89 | 20.61 | 21.03 | 20.81 | 21.44 | 21.20 | 21.33 |
| 110 | 0.02 | 18 | ... | 13.10 | 1.39 | 0.66 | 28 | 4.67 | 21.43 | 21.36 | 21.40 | 22.62 | 22.20 | 22.42 |

IMPERIAL STATEMENT No. III.—Deaths registered in the

| No. | A.—Rural circles. | | | | January. | February. | March. | April. | May. |
|-------------------------------|-------------------|-----|-----|-----|----------|-----------|--------|--------|--------|
| 1 | 2 | | | | 3 | 4 | 5 | 6 | 7 |
| 1 | Cachar | ... | ... | ... | 977 | 800 | 654 | 889 | 991 |
| 2 | Sylhet | ... | ... | ... | 6,793 | 4,974 | 3,269 | 3,869 | 4,029 |
| 3 | Goalpara | ... | ... | ... | 1,711 | 1,290 | 1,127 | 1,197 | 1,727 |
| 4 | Kamrup | ... | ... | ... | 839 | 596 | 701 | 978 | 1,344 |
| 5 | Darrang | ... | ... | ... | 747 | 579 | 653 | 592 | 1,263 |
| 6 | Nowgong | ... | ... | ... | 467 | 348 | 436 | 454 | 652 |
| 7 | Sibsagar | ... | ... | ... | 1,089 | 795 | 721 | 693 | 1,304 |
| 8 | Lakhimpur | ... | ... | ... | 778 | 788 | 814 | 717 | 1,053 |
| Total for rural circles | | | | | 13,401 | 10,089 | 8,375 | 9,387 | 12,363 |
| Ratio per mille of population | | | | | 1.96 | 1.63 | 1.23 | 1.42 | 1.81 |

| No. | B.—Towns. | | | | January. | February. | March. | April. | May. |
|--------------------------------------|--------------------|-----|-----|-----|----------|-----------|--------|--------|--------|
| 1 | 2 | | | | 3 | 4 | 5 | 6 | |
| SURMA VALLEY. | | | | | | | | | |
| 1 | Silchar ... | ... | ... | ... | 14 | 7 | 11 | 14 | 11 |
| 2 | Hailakandi ... | ... | ... | ... | 5 | 1 | 2 | 2 | 2 |
| 3 | Sylhet ... | ... | ... | ... | 24 | 17 | 18 | 22 | 20 |
| 4 | Karimganj ... | ... | ... | ... | 8 | 2 | 4 | 5 | 7 |
| 5 | Maulvibazar ... | ... | ... | ... | 4 | 2 | 2 | 2 | 6 |
| 6 | Habiganj ... | ... | ... | ... | 10 | 7 | 15 | 14 | 10 |
| 7 | Sunamganj ... | ... | ... | ... | 11 | 8 | 7 | 2 | 12 |
| Total ... | | | | | 76 | 44 | 59 | 61 | 68 |
| ASSAM VALLEY. | | | | | | | | | |
| 8 | Dhubri ... | ... | ... | ... | 21 | 9 | 7 | 9 | 17 |
| 9 | Goalpara ... | ... | ... | ... | 6 | 7 | 8 | 4 | 7 |
| 10 | Gauripur ... | ... | ... | ... | 28 | 9 | 9 | 15 | 9 |
| 11 | Gauhati ... | ... | ... | ... | 33 | 21 | 13 | 19 | 19 |
| 12 | Barpeta ... | ... | ... | ... | 22 | 16 | 27 | 22 | 19 |
| 13 | Palasbari ... | ... | ... | ... | 2 | 5 | 2 | 2 | 5 |
| 14 | Tezpur ... | ... | ... | ... | 17 | 17 | 10 | 12 | 20 |
| 15 | Mangaldai ... | ... | ... | ... | 3 | ... | 3 | 3 | 4 |
| 16 | Nowgong ... | ... | ... | ... | 16 | 13 | 14 | 10 | 20 |
| 17 | Jorhat ... | ... | ... | ... | 12 | 4 | 12 | 9 | 8 |
| 18 | Sibsagar ... | ... | ... | ... | 8 | 7 | 2 | 6 | 6 |
| 19 | Golaghat ... | ... | ... | ... | 6 | 6 | 7 | 33 | 4 |
| 20 | Nazira ... | ... | ... | ... | 9 | 1 | 5 | 2 | 8 |
| 21 | Dibrugarh ... | ... | ... | ... | 38 | 19 | 22 | 29 | 24 |
| 22 | North Lakhimpur... | ... | ... | ... | 2 | ... | 2 | 5 | 3 |
| 23 | Doom Dooma ... | ... | ... | ... | ... | 11 | 2 | 1 | 1 |
| 24 | Tinsukia ... | ... | ... | ... | 2 | 4 | 4 | 2 | 5 |
| Total ... | | | | | 225 | 149 | 149 | 183 | 179 |
| Total for the towns ... | | | | | 301 | 193 | 208 | 244 | 247 |
| Ratio per mille for towns ... | | | | | 1.94 | 1.38 | 1.34 | 1.36 | 1.59 |
| Total for the province ... | | | | | 13,702 | 10,273 | 8,583 | 9,631 | 12,610 |
| Ratio per mille for the province ... | | | | | 1.96 | 1.63 | 1.23 | 1.43 | 1.81 |

districts (rural circles) and towns of Assam during each month of the year 1930.

| June. | July. | August. | September. | October. | November. | December. | Total deaths during the year. |
|--------|--------|---------|------------|----------|-----------|-----------|-------------------------------|
| 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 938 | 1,050 | 837 | 803 | 887 | 869 | 1,169 | 10,864 |
| 3,453 | 4,307 | 3,914 | 4,051 | 4,988 | 5,537 | 6,122 | 55,596 |
| 1,731 | 1,644 | 1,537 | 1,354 | 1,073 | 1,961 | 2,025 | 18,923 |
| 1,289 | 1,232 | 988 | 946 | 1,011 | 1,092 | 1,115 | 12,129 |
| 1,220 | 973 | 929 | 1,005 | 1,060 | 822 | 1,171 | 11,005 |
| 641 | 1,116 | 959 | 742 | 574 | 627 | 425 | 7,441 |
| 1,320 | 1,614 | 1,515 | 1,169 | 1,391 | 1,529 | 1,264 | 14,395 |
| 1,143 | 1,302 | 1,334 | 1,334 | 1,242 | 1,263 | 1,227 | 12,995 |
| 11,735 | 13,338 | 12,924 | 11,404 | 12,831 | 13,691 | 14,818 | 1,43,347 |
| 1.78 | 1.94 | 1.76 | 1.73 | 1.88 | 2.07 | 2.17 | 21.39 |

| June. | July. | August. | September. | October. | November. | December. | Total deaths during the year. |
|--------|--------|---------|------------|----------|-----------|-----------|-------------------------------|
| 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 11 | 7 | 8 | 18 | 9 | 11 | 11 | 132 |
| 1 | 3 | 7 | 3 | 2 | 2 | 4 | 34 |
| 19 | 31 | 26 | 23 | 24 | 48 | 44 | 316 |
| 6 | 11 | 8 | 10 | 9 | 5 | 6 | 81 |
| 5 | 5 | 11 | 7 | 11 | 3 | 8 | 66 |
| 11 | 12 | 9 | 12 | 16 | 12 | 15 | 143 |
| 4 | 10 | 11 | 10 | 9 | 12 | 10 | 106 |
| 57 | 79 | 80 | 83 | 80 | 93 | 98 | 878 |
| 6 | 15 | 13 | 12 | 12 | 17 | 12 | 159 |
| 14 | 12 | 2 | 5 | 11 | 18 | 4 | 98 |
| 2 | 11 | 3 | 19 | 21 | 10 | 13 | 149 |
| 27 | 30 | 29 | 19 | 28 | 22 | 19 | 279 |
| 24 | 58 | 26 | 25 | 13 | 31 | 20 | 273 |
| ... | 11 | 6 | 8 | 3 | 9 | ... | 53 |
| 16 | 26 | 31 | 32 | 26 | 27 | 29 | 263 |
| ... | 4 | ... | 1 | 5 | 9 | 3 | 35 |
| 27 | 15 | 17 | 13 | 19 | 21 | 15 | 200 |
| 12 | 8 | 21 | 18 | 19 | 11 | 12 | 146 |
| 18 | 9 | 4 | 3 | 6 | 8 | 4 | 81 |
| 4 | 5 | 9 | 6 | 4 | 5 | 11 | 100 |
| 7 | 3 | 3 | 3 | 7 | 5 | 8 | 61 |
| 26 | 22 | 30 | 40 | 48 | 48 | 28 | 374 |
| 3 | ... | 1 | 8 | 7 | 6 | 5 | 42 |
| 4 | 2 | ... | 2 | 6 | 16 | 4 | 49 |
| 2 | 1 | 2 | 4 | 5 | 8 | 2 | 41 |
| 192 | 202 | 197 | 218 | 210 | 271 | 189 | 2,394 |
| 249 | 281 | 277 | 301 | 320 | 364 | 287 | 3,273 |
| 1.66 | 1.83 | 1.79 | 2.00 | 2.07 | 2.43 | 1.86 | 21.54 |
| 11,984 | 13,519 | 12,301 | 11,705 | 13,151 | 14,055 | 15,105 | 146,619 |
| 1.77 | 1.94 | 1.76 | 1.73 | 1.88 | 2.08 | 2.16 | 21.40 |

with reference to number of days in each month.

IMPERIAL STATEMENT No. IV.—Deaths registered according to

| No. | A.—Rural Circles. | Under 1 year. | | | | | | | | | | | | 1 and under 5. | | 5 and under 10. | |
|-----|--------------------------------|------------------------|---------|--------|--|---------|--------|--|---------|--------|--------|---------|--------|----------------|---------|-----------------|---------|
| | | Not exceeding 1 month. | | | Over 1 month and not exceeding 6 months. | | | Over 6 months and not exceeding 12 months. | | | Total | | | Male. | Female. | Male. | Female. |
| | | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 1 | Cachar ... | 579 | 562 | 1,081 | 384 | 339 | 723 | 492 | 413 | 905 | 1,435 | 1,254 | 2,709 | 930 | 896 | 282 | 249 |
| 2 | Sylhet ... | 5,397 | 4,320 | 9,727 | 2,123 | 1,718 | 3,841 | 814 | 672 | 1,486 | 8,334 | 6,720 | 15,054 | 3,565 | 3,240 | 1,478 | 1,309 |
| 3 | Goalpara ... | 1,613 | 1,217 | 2,840 | 1,031 | 903 | 1,934 | 335 | 299 | 634 | 2,969 | 2,429 | 5,398 | 1,408 | 1,393 | 852 | 624 |
| 4 | Kamrup ... | 840 | 709 | 1,549 | 507 | 571 | 1,078 | 244 | 239 | 474 | 1,591 | 1,510 | 3,101 | 1,265 | 1,219 | 549 | 492 |
| 5 | Darrang ... | 462 | 438 | 900 | 549 | 556 | 1,085 | 279 | 292 | 571 | 1,290 | 1,266 | 2,556 | 1,005 | 901 | 349 | 316 |
| 6 | Nowgong ... | 553 | 573 | 1,126 | 423 | 398 | 821 | 200 | 215 | 415 | 1,176 | 1,186 | 2,362 | 697 | 628 | 257 | 246 |
| 7 | Sibsagar ... | 741 | 641 | 1,382 | 599 | 539 | 1,138 | 316 | 319 | 635 | 1,656 | 1,499 | 3,155 | 1,371 | 1,277 | 548 | 490 |
| 8 | Lakhimpur ... | 581 | 488 | 1,069 | 460 | 361 | 821 | 221 | 222 | 443 | 1,212 | 1,071 | 2,283 | 1,108 | 1,056 | 471 | 449 |
| | Total for rural circles. | 10,706 | 8,908 | 19,674 | 6,076 | 5,365 | 11,441 | 2,891 | 2,662 | 5,553 | 19,733 | 16,935 | 36,668 | 11,242 | 10,610 | 4,773 | 4,175 |
| | Ratio per mille | ... | ... | ... | ... | ... | ... | ... | ... | ... | 183.06 | 166.07 | 174.80 | ... | ... | ... | ... |
| | B.—TOWNS. | | | | | | | | | | | | | | | | |
| | <i>Surma Valley.</i> | | | | | | | | | | | | | | | | |
| 1 | Silchar ... | 5 | 1 | 6 | 5 | 5 | 10 | ... | ... | ... | 10 | 6 | 16 | 8 | 8 | 4 | 5 |
| 2 | Hailakandi ... | 2 | 2 | 4 | ... | 2 | 2 | 2 | ... | 2 | 4 | 4 | 8 | 3 | 2 | ... | ... |
| 3 | Sylhet ... | 26 | 25 | 51 | 17 | 13 | 30 | 9 | 6 | 15 | 52 | 44 | 96 | 15 | 12 | 5 | 8 |
| 4 | Karimganj ... | 6 | 6 | 12 | 4 | 4 | 8 | ... | 3 | 3 | 10 | 13 | 23 | 2 | 1 | 3 | 2 |
| 5 | Maulvibazar ... | 8 | 1 | 9 | 4 | 4 | 8 | 1 | 3 | 4 | 13 | 8 | 21 | 2 | 3 | 1 | 3 |
| 6 | Habiganj ... | 12 | 7 | 19 | 11 | 9 | 20 | 1 | 1 | 2 | 24 | 17 | 41 | 13 | 11 | 5 | ... |
| 7 | Sunamganj ... | 9 | 10 | 19 | ... | 7 | 7 | 1 | ... | 1 | 10 | 17 | 27 | 7 | 15 | 1 | 4 |
| | <i>Assam Valley.</i> | | | | | | | | | | | | | | | | |
| 1 | Dhubri ... | 10 | 8 | 18 | 5 | 8 | 13 | 4 | 5 | 9 | 19 | 21 | 40 | 5 | 8 | 6 | 3 |
| 2 | Goalpara ... | 6 | 17 | 23 | 2 | 1 | 3 | 1 | 4 | 5 | 9 | 22 | 31 | 5 | 6 | 3 | 1 |
| 3 | Gauripur ... | 18 | 14 | 32 | 7 | 6 | 13 | 4 | 3 | 7 | 29 | 23 | 52 | 6 | 9 | 5 | 5 |
| 4 | Gauhati ... | 28 | 10 | 38 | 14 | 11 | 25 | 3 | 5 | 8 | 45 | 26 | 71 | 16 | 12 | 6 | 7 |
| 5 | Barpeta ... | 19 | 15 | 34 | 19 | 10 | 29 | 11 | 9 | 20 | 49 | 34 | 83 | 19 | 27 | 6 | 10 |
| 6 | Palasbari ... | 4 | 6 | 10 | 2 | 3 | 5 | 3 | 2 | 5 | 9 | 11 | 20 | 4 | 5 | 2 | ... |
| 7 | Tezpur ... | 10 | 9 | 19 | 6 | 13 | 19 | 1 | 4 | 5 | 17 | 26 | 43 | 29 | 16 | 5 | 6 |
| 8 | Mangaldai ... | ... | 2 | 2 | 2 | ... | 2 | 1 | 2 | 3 | 3 | 4 | 7 | 1 | ... | 1 | ... |
| 9 | Nowgong ... | 6 | 9 | 15 | 19 | 13 | 32 | 5 | 5 | 10 | 30 | 27 | 57 | 11 | 20 | 6 | 2 |
| 10 | Jorhat ... | 12 | 7 | 19 | 7 | 6 | 13 | 4 | 2 | 6 | 23 | 15 | 38 | 5 | 7 | 5 | 3 |
| 11 | Sibsagar ... | 8 | 5 | 13 | 6 | ... | 6 | 3 | 4 | 7 | 17 | 9 | 26 | 6 | 3 | 1 | 2 |
| 12 | Golaghat ... | 1 | 6 | 7 | 4 | 2 | 6 | 2 | 1 | 3 | 7 | 9 | 16 | 5 | 1 | 1 | 4 |
| 13 | Nazira ... | 8 | 3 | 11 | 2 | ... | 2 | 3 | 2 | 5 | 13 | 5 | 18 | 3 | 2 | 1 | 2 |
| 14 | Dibrugarh ... | 11 | 13 | 24 | 13 | 8 | 21 | 5 | 3 | 8 | 29 | 24 | 53 | 10 | 8 | 5 | 9 |
| 15 | North Lakhimpur ... | 4 | 5 | 9 | 2 | 1 | 3 | 1 | ... | 1 | 7 | 6 | 13 | ... | ... | ... | 1 |
| 16 | Doom Dooma ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | 1 | 1 | 1 | ... | 1 | ... |
| 17 | Tineukia ... | 2 | 2 | 4 | 1 | ... | 1 | 1 | 1 | 2 | 4 | 3 | 7 | ... | 6 | 1 | 3 |
| | Total for towns | 215 | 183 | 398 | 152 | 127 | 279 | 66 | 65 | 131 | 433 | 375 | 808 | 170 | 183 | 74 | 80 |
| | Ratio per mille | ... | ... | ... | ... | ... | ... | ... | ... | ... | 166.41 | 152.63 | 159.72 | ... | ... | ... | ... |
| | Total for the province. | 10,921 | 9,091 | 20,072 | 6,228 | 5,492 | 11,720 | 2,957 | 2,727 | 5,684 | 20,166 | 17,310 | 37,476 | 11,519 | 10,793 | 4,853 | 4,255 |
| | Ratio per mille of population. | ... | ... | ... | ... | ... | ... | ... | ... | ... | 182.66 | 165.75 | 174.44 | 32.08 | 28.67 | 8.35 | 7.43 |

age in the districts (rural circles) and towns of Assam during the year 1930.

| 10 and under 15. | | 15 and under 20. | | 20 and under 30. | | 30 and under 40. | | 40 and under 50. | | 50 and under 60. | | 60 and upwards. | | Total (all ages). | |
|------------------|---------|------------------|---------|------------------|---------|------------------|---------|------------------|---------|------------------|---------|-----------------|---------|-------------------|---------|
| Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 |
| 170 | 111 | 165 | 302 | 378 | 820 | 434 | 522 | 462 | 290 | 411 | 303 | 813 | 617 | 5,500 | 5,364 |
| 852 | 712 | 1,018 | 1,456 | 2,432 | 3,986 | 2,833 | 2,572 | 2,426 | 1,604 | 2,357 | 1,568 | 4,049 | 3,085 | 29,344 | 26,252 |
| 421 | 341 | 377 | 533 | 999 | 1,141 | 984 | 745 | 844 | 476 | 651 | 450 | 865 | 510 | 10,230 | 8,642 |
| 621 | 193 | 194 | 358 | 390 | 639 | 484 | 477 | 489 | 361 | 477 | 166 | 599 | 415 | 6,299 | 5,839 |
| 168 | 153 | 175 | 269 | 406 | 734 | 588 | 597 | 566 | 374 | 501 | 345 | 606 | 403 | 5,647 | 5,358 |
| 138 | 119 | 123 | 214 | 225 | 299 | 259 | 224 | 295 | 232 | 277 | 211 | 383 | 247 | 3,835 | 3,606 |
| 251 | 371 | 229 | 323 | 467 | 1,107 | 633 | 749 | 635 | 455 | 681 | 452 | 789 | 407 | 7,260 | 7,135 |
| 254 | 216 | 207 | 375 | 621 | 864 | 794 | 805 | 734 | 492 | 689 | 427 | 664 | 436 | 6,894 | 6,191 |
| 2,515 | 2,216 | 2,403 | 3,835 | 5,828 | 9,590 | 7,099 | 6,691 | 6,451 | 4,284 | 6,044 | 3,922 | 8,768 | 6,120 | 74,969 | 68,378 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | * |
| 2 | ... | 2 | 3 | 6 | 9 | 10 | 8 | 9 | 2 | 12 | 4 | 12 | 12 | 75 | 57 |
| ... | ... | 1 | 4 | 2 | 1 | 2 | 3 | 2 | ... | 2 | 1 | 2 | ... | 18 | 16 |
| 2 | 2 | 7 | 10 | 8 | 24 | 12 | 12 | 17 | 8 | 10 | 10 | 31 | 27 | 159 | 157 |
| 1 | 4 | 1 | 1 | 6 | 8 | 1 | 4 | 3 | 1 | 7 | 5 | 4 | 4 | 38 | 43 |
| ... | ... | ... | 4 | 1 | 5 | 1 | 5 | 3 | 1 | 4 | 1 | 3 | 8 | 28 | 33 |
| 1 | 2 | 2 | 3 | 4 | 13 | 11 | 3 | 6 | 2 | 10 | 2 | 6 | 8 | 82 | 61 |
| 3 | 1 | 1 | 4 | 3 | 4 | 5 | 1 | 6 | 1 | 9 | 3 | 5 | 6 | 50 | 56 |
| 1 | 2 | 1 | 6 | 20 | 5 | 13 | 7 | 9 | 5 | 2 | 2 | 4 | 11 | 80 | 70 |
| 2 | ... | 3 | 5 | 1 | 13 | 5 | 3 | 2 | 2 | 6 | 1 | 4 | 5 | 40 | 53 |
| 7 | 4 | 4 | 7 | 4 | 8 | 8 | 1 | 7 | 1 | 4 | 5 | 6 | 6 | 80 | 69 |
| 2 | 2 | 3 | 6 | 19 | 20 | 23 | 8 | 10 | 6 | 17 | 7 | 18 | 26 | 159 | 129 |
| 5 | 5 | 7 | 5 | 13 | 3 | 10 | 11 | 15 | 7 | 12 | 9 | 10 | 14 | 146 | 127 |
| 2 | 1 | 1 | 3 | ... | 1 | ... | ... | 2 | 1 | 2 | 1 | 2 | 6 | 24 | 29 |
| 8 | 2 | 7 | 8 | 26 | 17 | 29 | 12 | 24 | 5 | 17 | 2 | 8 | 8 | 161 | 102 |
| ... | ... | ... | 1 | 5 | 0 | 7 | 1 | 3 | ... | 5 | 2 | 1 | 1 | 26 | 9 |
| 7 | 4 | 2 | 4 | 17 | 5 | 11 | 11 | 6 | 7 | 8 | 5 | 7 | 7 | 108 | 92 |
| 4 | 3 | 2 | 8 | 11 | 10 | 11 | 3 | 8 | 4 | 19 | 2 | 11 | 1 | 90 | 56 |
| 3 | 3 | 1 | 5 | ... | 5 | 3 | 1 | 8 | 1 | 2 | 3 | 3 | 5 | 44 | 37 |
| 1 | 2 | 2 | 3 | 4 | 5 | 7 | 7 | 14 | 4 | 8 | 3 | 7 | 6 | 56 | 44 |
| 2 | ... | 4 | 1 | 6 | 1 | 1 | 1 | 5 | 3 | 4 | 1 | 2 | 4 | 41 | 20 |
| 10 | 5 | 13 | 26 | 27 | 31 | 51 | 13 | 46 | 13 | 20 | 8 | 8 | 13 | 219 | 135 |
| ... | 1 | 1 | 1 | 2 | 3 | 2 | 3 | 2 | 0 | 7 | 3 | 2 | 1 | 23 | 19 |
| ... | ... | 2 | 4 | 6 | 6 | 6 | 1 | 9 | 3 | 5 | ... | 1 | 3 | 31 | 18 |
| 2 | 3 | ... | 1 | 3 | 3 | ... | 1 | 2 | ... | 2 | 2 | 2 | 2 | 16 | 25 |
| 65 | 46 | 67 | 123 | 194 | 202 | 229 | 195 | 218 | 78 | 185 | 82 | 159 | 184 | 1,794 | 1,478 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | * |
| 2,580 | 2,262 | 2,560 | 3,958 | 6,022 | 9,792 | 7,238 | 6,816 | 6,669 | 4,362 | 6,229 | 4,004 | 8,927 | 6,304 | 76,763 | 69,856 |
| 5.95 | 6.60 | 9.19 | 13.55 | 10.43 | 15.95 | 13.02 | 15.19 | 18.53 | 16.81 | 31.33 | 26.69 | 65.03 | 53.57 | 21.43 | 21.36 |

* Population not available.

IMPERIAL STATEMENT No. V.—Deaths registered according

| No. | Districts. | Population according | | | | | | | | |
|----------------------|-----------------------------------|----------------------|---------|--------|-----------|-----------|-----------|--------------|-----------|-----------|
| | | Christians. | | | Hindus. | | | Muhammadans. | | |
| | | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| SURMA VALLEY. | | | | | | | | | | |
| 1 | Cachar ... | 848 | 762 | 1,610 | 166,782 | 152,463 | 319,245 | 89,513 | 81,109 | 170,622 |
| 2 | Sylhet... | 970 | 786 | 1,756 | 565,443 | 534,302 | 1,099,745 | 758,916 | 694,474 | 1,453,390 |
| | Total ... | 1,818 | 1,548 | 3,366 | 732,225 | 686,765 | 1,418,990 | 828,429 | 775,583 | 1,604,012 |
| ASSAM VALLEY. | | | | | | | | | | |
| 3 | Goalpara ... | 5,434 | 4,878 | 10,312 | 198,904 | 170,488 | 369,392 | 167,765 | 148,725 | 316,490 |
| 4 | Kamrup ... | 1,926 | 1,735 | 3,661 | 283,554 | 261,083 | 544,639 | 52,586 | 51,560 | 111,546 |
| 5 | Darrang ... | 2,816 | 2,502 | 5,318 | 179,272 | 158,457 | 337,729 | 20,137 | 16,398 | 36,535 |
| 6 | Nowgong ... | 1,465 | 1,460 | 2,925 | 116,864 | 105,235 | 222,099 | 38,655 | 31,927 | 70,582 |
| 7 | Sibsagar ... | 4,557 | 3,823 | 8,380 | 365,885 | 329,131 | 695,016 | 19,370 | 15,624 | 34,994 |
| 8 | Lakhimpur ... | 4,216 | 3,515 | 7,731 | 244,852 | 214,283 | 459,135 | 9,485 | 5,961 | 15,446 |
| | Total ... | 20,414 | 17,913 | 38,327 | 1,389,331 | 1,238,679 | 2,628,010 | 315,938 | 270,195 | 585,593 |
| | Total for the Province ... | 22,232 | 19,461 | 41,693 | 2,121,556 | 1,925,444 | 4,047,000 | 1,143,827 | 1,045,778 | 2,189,605 |

IMPERIAL STATEMENT No. V.—Deaths registered according

| No. | Districts. | Number of deaths registered— <i>conold.</i> | | | | | | | | | |
|-----|------------------------|---|---------|--------|----------------|---------|--------|--------|---------|--------|---------|
| | | Buddhists. | | | Other classes. | | | Total. | | | |
| | | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | |
| | | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | |
| | SURMA VALLEY. | | | | | | | | | | |
| 1 | Cachar | ... | ... | ... | 219 | 193 | 412 | 5,593 | 5,437 | 11,030 | |
| 2 | Sylhet... | ... | ... | ... | 334 | 250 | 584 | 29,701 | 26,607 | 56,308 | |
| | Total | ... | ... | ... | 553 | 443 | 996 | 35,294 | 32,044 | 67,338 | |
| | ASSAM VALLEY. | | | | | | | | | | |
| 3 | Goalpara | ... | 4 | 5 | 9 | 2,078 | 1,868 | 3,946 | 10,480 | 8,839 | 19,319 |
| 4 | Kamrup | ... | ... | ... | ... | 957 | 854 | 1,811 | 6,638 | 6,106 | 12,734 |
| 5 | Darrang | ... | 13 | 16 | 29 | 1,727 | 1,559 | 3,286 | 5,834 | 5,469 | 11,303 |
| 6 | Nowgong | ... | ... | ... | ... | 925 | 853 | 1,778 | 3,943 | 3,698 | 7,641 |
| 7 | Sibsagar | ... | 28 | 20 | 48 | 1,163 | 1,071 | 2,234 | 7,491 | 7,292 | 14,783 |
| 8 | Lakhimpur | ... | 25 | 10 | 35 | 872 | 934 | 1,806 | 7,093 | 6,408 | 13,501 |
| | Total | ... | 70 | 51 | 121 | 7,722 | 7,139 | 14,861 | 41,469 | 37,812 | 79,281 |
| | Total for the Province | | 70 | 51 | 121 | 8,275 | 7,582 | 15,857 | 76,763 | 69,856 | 146,619 |

to class in the districts of Assam during the year 1930.

| to the Census of 1921. | | | | | | | | | Number of deaths registered. | | | | | | | | |
|------------------------|---------|--------|----------------|---------|---------|-----------|-----------|-----------|------------------------------|---------|--------|---------|---------|--------|--------------|---------|--------|
| Buddhists. | | | Other classes. | | | Total. | | | Christians. | | | Hindus. | | | Muhammadans. | | |
| Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 33 | 2 | 35 | 4,418 | 4,554 | 8,972 | 261,594 | 238,890 | 500,484 | 16 | 8 | 24 | 3,387 | 3,278 | 6,665 | 1,971 | 1,958 | 3,929 |
| 34 | 9 | 43 | 3,371 | 3,036 | 6,407 | 1,308,734 | 1,232,007 | 2,541,341 | 11 | 19 | 30 | 12,976 | 10,872 | 23,148 | 17,080 | 15,466 | 32,546 |
| 67 | 11 | 78 | 7,789 | 7,590 | 15,379 | 1,570,328 | 1,471,497 | 3,041,825 | 27 | 27 | 54 | 15,663 | 14,150 | 29,813 | 19,051 | 17,424 | 36,475 |
| 547 | 375 | 922 | 33,978 | 31,429 | 65,407 | 406,628 | 355,895 | 762,523 | 111 | 109 | 220 | 3,816 | 3,036 | 6,852 | 4,471 | 3,821 | 8,292 |
| 286 | 113 | 399 | 51,515 | 50,911 | 102,426 | 397,267 | 365,404 | 762,671 | 28 | 32 | 60 | 4,621 | 4,202 | 8,823 | 1,022 | 958 | 1,980 |
| 466 | 244 | 710 | 50,158 | 46,992 | 97,150 | 252,849 | 224,593 | 477,442 | 107 | 122 | 229 | 3,505 | 3,318 | 6,823 | 482 | 454 | 936 |
| 24 | 6 | 30 | 51,723 | 50,648 | 102,371 | 208,731 | 189,276 | 398,007 | 16 | 22 | 38 | 2,261 | 2,199 | 4,460 | 741 | 624 | 1,365 |
| 1,089 | 1,055 | 2,144 | 42,712 | 39,651 | 82,363 | 433,913 | 389,284 | 823,197 | 55 | 69 | 124 | 5,994 | 5,939 | 11,933 | 251 | 193 | 444 |
| 2,516 | 2,110 | 4,626 | 51,774 | 47,865 | 99,639 | 312,843 | 273,734 | 586,577 | 46 | 54 | 100 | 5,976 | 5,276 | 11,252 | 174 | 134 | 308 |
| 5,228 | 3,903 | 9,131 | 231,800 | 267,490 | 549,356 | 2,012,231 | 1,738,186 | 3,810,417 | 363 | 478 | 771 | 26,173 | 24,030 | 50,203 | 7,141 | 6,184 | 13,325 |
| 5,295 | 3,914 | 9,209 | 269,640 | 275,086 | 564,735 | 3,582,559 | 2,909,683 | 6,859,242 | 390 | 435 | 825 | 41,836 | 38,189 | 80,016 | 26,192 | 23,608 | 49,800 |

to class in the districts of Assam during the year 1929—concll.

| Ratio of deaths per 1,000 of population. | | | | | | | | | | | | | | | | | |
|--|---------|--------|---------|---------|--------|--------------|---------|--------|------------|---------|--------|----------------|---------|--------|--------|---------|--------|
| Christians. | | | Hindus. | | | Muhammadans. | | | Buddhists. | | | Other classes. | | | Total. | | |
| Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. |
| 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 |
| 18.87 | 16.10 | 14.91 | 20.31 | 21.50 | 20.88 | 22.02 | 24.14 | 22.03 | ... | ... | ... | 49.57 | 42.38 | 45.02 | 21.38 | 22.76 | 22.04 |
| 11.34 | 24.17 | 17.68 | 21.71 | 20.35 | 21.05 | 23.11 | 22.27 | 22.71 | ... | ... | ... | 99.08 | 62.34 | 91.15 | 22.69 | 21.59 | 22.16 |
| 14.85 | 17.44 | 16.04 | 21.39 | 21.60 | 21.01 | 22.09 | 22.47 | 22.74 | ... | ... | ... | 70.09 | 58.57 | 64.76 | 22.42 | 21.78 | 22.14 |
| 20.43 | 22.34 | 21.33 | 19.18 | 17.61 | 18.55 | 20.65 | 25.69 | 26.20 | 7.31 | 13.33 | 9.76 | 61.16 | 59.44 | 60.33 | 25.77 | 24.84 | 25.34 |
| 14.14 | 18.44 | 16.39 | 16.30 | 16.32 | 16.31 | 17.04 | 18.58 | 17.75 | ... | ... | ... | 18.58 | 16.77 | 17.68 | 16.68 | 16.71 | 16.70 |
| 38.00 | 48.76 | 43.06 | 19.55 | 20.94 | 20.20 | 22.94 | 27.69 | 25.62 | 27.90 | 65.57 | 40.84 | 34.43 | 33.18 | 33.82 | 23.07 | 24.25 | 23.67 |
| 10.92 | 15.07 | 12.99 | 19.35 | 21.90 | 20.68 | 19.17 | 19.54 | 19.34 | ... | ... | ... | 17.88 | 16.84 | 17.37 | 18.89 | 19.34 | 19.20 |
| 12.07 | 18.05 | 14.80 | 16.38 | 18.04 | 17.17 | 12.96 | 12.35 | 12.69 | 21.16 | 18.96 | 19.64 | 27.23 | 27.01 | 27.12 | 17.26 | 18.73 | 17.96 |
| 10.91 | 15.26 | 12.93 | 24.41 | 24.62 | 24.51 | 18.35 | 22.48 | 19.94 | 9.94 | 4.74 | 7.57 | 16.84 | 19.51 | 18.13 | 22.67 | 23.41 | 23.02 |
| 17.78 | 22.78 | 20.12 | 18.84 | 19.40 | 19.10 | 22.64 | 22.89 | 22.75 | 13.39 | 13.07 | 13.25 | 27.40 | 26.69 | 27.05 | 20.61 | 21.03 | 20.81 |
| 17.54 | 22.35 | 19.79 | 19.72 | 19.83 | 19.77 | 22.90 | 22.57 | 22.74 | 13.22 | 13.03 | 13.14 | 28.57 | 27.20 | 28.08 | 21.43 | 21.36 | 21.40 |

IMPERIAL STATEMENT No. VI.—Deaths registered from different

| 1 | 2 | 3 | 4 | | | 5 | 6 | 7 | 8 | 9 | 10 | |
|----------------------------|-------------------------------------|---|---------|---------|---------|-------------|----------|------------|---------|--------|--------------------------|-----------------------|
| No. | Districts and towns. | Population according to Census of 1921. | Births. | | | Birth-rate. | Cholera. | Small-pox. | Plague. | Fever. | Dysentery and Diarrhoea. | Respiratory diseases. |
| | | | Male. | Female. | Total. | | | | | | | |
| DISTRICTS EXCLUDING TOWNS. | | | | | | | | | | | | |
| SURMA VALLEY. | | | | | | | | | | | | |
| 1 | Cachar | 488,052 | 8,326 | 7,629 | 16,146 | 33·08 | 81 | 31 | ... | 5,126 | 1,157 | 909 |
| 2 | Sylhet | 2,505,744 | 41,017 | 38,717 | 79,734 | 31·82 | 3,747 | 129 | ... | 23,158 | 3,011 | 1,266 |
| | Total | 2,993,796 | 49,343 | 46,337 | 95,680 | 32·03 | 3,828 | 160 | ... | 34,684 | 4,168 | 2,175 |
| ASSAM VALLEY. | | | | | | | | | | | | |
| 3 | Goalpara | 745,293 | 13,753 | 12,845 | 26,598 | 35·68 | 1,148 | 466 | ... | 16,230 | 240 | 95 |
| 4 | Kamrup | 731,722 | 9,808 | 9,451 | 19,259 | 26·32 | 905 | 232 | ... | 8,882 | 433 | 221 |
| 5 | Darrang | 469,078 | 7,806 | 7,312 | 15,118 | 32·23 | 103 | 80 | ... | 7,421 | 786 | 589 |
| 6 | Nowgong | 391,122 | 6,283 | 5,965 | 12,248 | 31·31 | 53 | 1 | ... | 6,020 | 239 | 141 |
| 7 | Sibsagar | 804,955 | 12,043 | 11,512 | 23,555 | 29·26 | 95 | 22 | ... | 8,377 | 1,843 | 1,041 |
| 8 | Lakhimpur | 564,362 | 8,762 | 8,356 | 17,118 | 30·33 | 59 | 222 | ... | 7,268 | 1,320 | 1,136 |
| | Total | 3,706,532 | 58,455 | 55,441 | 113,896 | 30·73 | 2,453 | 1,023 | ... | 54,198 | 4,881 | 3,223 |
| | Total of districts excluding towns. | 6,700,328 | 107,798 | 101,978 | 209,776 | 31·31 | 6,281 | 1,183 | ... | 88,882 | 9,049 | 5,398 |
| TOWNS. | | | | | | | | | | | | |
| SURMA VALLEY. | | | | | | | | | | | | |
| 1 | Silchar | 10,204 | 96 | 90 | 186 | 18·23 | ... | ... | ... | 45 | 19 | 14 |
| 2 | Hailakandi | 2,228 | 33 | 21 | 59 | 26·48 | 1 | ... | ... | 9 | 6 | 1 |
| 3 | Sylhet | 16,912 | 259 | 277 | 536 | 31·69 | 18 | ... | ... | 28 | 33 | 69 |
| 4 | Karimganj | 4,552 | 44 | 69 | 113 | 24·82 | 1 | ... | ... | 24 | 6 | 5 |
| 5 | Maulvi Bazar | 3,334 | 70 | 65 | 135 | 40·49 | ... | ... | ... | 38 | 19 | 4 |
| 6 | Habiganj | 5,918 | 100 | 82 | 182 | 30·75 | 3 | ... | ... | 30 | 18 | 13 |
| 7 | Sunamganj | 4,881 | 80 | 87 | 167 | 34·21 | 2 | ... | ... | 25 | 9 | 2 |
| | Total | 48,029 | 687 | 691 | 1,378 | 28·69 | 25 | ... | ... | 199 | 110 | 108 |

causes in the districts and towns of the province of Assam during the year 1930.

| 11 | | | | | | 12 | 13 | 14 | | | | | | | | | | | 15 |
|-----------|---------|----------------------|---------|--------------------------|--------|-------------------|---------|--|------------|---------|--------|--------------------------|-----------------------|-----------|-------------------|------------------|------------------------------|---|-----|
| Injuries. | | | | | | All other causes. | Total. | Ratio of deaths per 1,000 of population. | | | | | | | | | | | No. |
| Suicide. | | Wounds or accidents. | Rabies. | Snakes and wild animals. | Total. | | | Cholera. | Small-pox. | Plague. | Fever. | Dysentery and Diarrhoea. | Respiratory diseases. | Injuries. | All other causes. | From all causes. | | | |
| Male. | Female. | | | | | | | | | | | | | | | For the year. | Mean of previous five years. | | |
| 9 | 3 | 104 | 2 | 9 | 127 | 3,033 | 10,864 | 17 | 06 | ... | 11.32 | 2.37 | 1.86 | 26 | 6.21 | 22.26 | 22.44 | 1 | |
| 22 | 11 | 676 | 5 | 38 | 752 | 17,533 | 55,596 | 1.50 | 05 | ... | 11.64 | 1.20 | 51 | 30 | 7.00 | 22.19 | 24.08 | 2 | |
| 31 | 14 | 780 | 7 | 47 | 879 | 20,566 | 66,460 | 1.21 | 05 | ... | 11.59 | 1.39 | 73 | 29 | 6.87 | 22.20 | 23.85 | | |
| 21 | 10 | 150 | 8 | 48 | 237 | 486 | 18,922 | 1.54 | 03 | ... | 21.78 | 35 | 13 | 32 | 65 | 25.39 | 27.41 | 3 | |
| 27 | 2 | 64 | 8 | 44 | 165 | 1,291 | 12,129 | 1.24 | 02 | ... | 12.14 | 59 | 30 | 23 | 1.76 | 16.58 | 19.25 | 4 | |
| 9 | 6 | 73 | 5 | 38 | 131 | 1,805 | 11,005 | 41 | 17 | ... | 15.82 | 1.68 | 1.26 | 28 | 3.85 | 23.46 | 23.84 | 5 | |
| 10 | 2 | 58 | 5 | 14 | 89 | 898 | 7,441 | 14 | 003 | ... | 15.39 | 61 | 36 | 23 | 2.30 | 19.02 | 19.44 | 6 | |
| 41 | 22 | 113 | 6 | 15 | 197 | 2,820 | 14,395 | 12 | 03 | ... | 10.41 | 2.29 | 1.29 | 24 | 3.50 | 17.88 | 17.91 | 7 | |
| 11 | 10 | 88 | 10 | 16 | 135 | 2,833 | 12,993 | 10 | 39 | ... | 12.68 | 2.34 | 2.01 | 24 | 5.06 | 23.03 | 19.75 | 8 | |
| 119 | 72 | 546 | 42 | 175 | 954 | 10,155 | 76,887 | 66 | 28 | ... | 14.62 | 1.32 | 87 | 26 | 2.74 | 10.74 | 21.28 | | |
| 150 | 86 | 1,326 | 49 | 222 | 1,833 | 30,721 | 143,347 | 94 | 18 | ... | 13.27 | 1.35 | 81 | 27 | 4.58 | 21.39 | 22.43 | | |
| ... | ... | 3 | ... | ... | 3 | 51 | 132 | ... | ... | ... | 4.41 | 1.86 | 1.37 | 29 | 5.00 | 12.94 | 14.21 | 1 | |
| ... | ... | 2 | ... | ... | 2 | 15 | 34 | 45 | ... | ... | 4.04 | 2.69 | 45 | 50 | 6.73 | 15.26 | 13.91 | 2 | |
| ... | ... | 2 | 1 | ... | 3 | 165 | 316 | 1.06 | ... | ... | 1.66 | 1.95 | 4.08 | 18 | 9.76 | 18.68 | 21.17 | 3 | |
| 1 | ... | 1 | ... | ... | 2 | 43 | 81 | 23 | ... | ... | 5.27 | 1.32 | 1.10 | 44 | 9.45 | 17.79 | 19.99 | 4 | |
| ... | ... | ... | ... | ... | ... | 5 | 66 | ... | ... | ... | 11.40 | 5.70 | 1.20 | ... | 1.50 | 19.80 | 11.70 | 5 | |
| ... | ... | 11 | ... | ... | 11 | 68 | 143 | 51 | ... | ... | 5.07 | 3.04 | 2.20 | 1.86 | 11.49 | 24.16 | 28.89 | 6 | |
| ... | ... | 5 | ... | ... | 5 | 63 | 106 | 41 | ... | ... | 5.12 | 1.84 | 41 | 1.02 | 12.91 | 21.71 | 25.56 | 7 | |
| 1 | ... | 24 | 1 | ... | 25 | 410 | 876 | 52 | ... | ... | 4.10 | 2.29 | 2.25 | 54 | 8.54 | 18.28 | 19.78 | | |

IMPERIAL STATEMENT No. VI.—Deaths registered from different causes

| 1 | 2 | 3 | 4 | | | 5 | 6 | 7 | 8 | 9 | 10 | |
|-------------------------------|----------------------|---|---------|---------|---------|-------------|----------|------------|---------|--------|--------------------------|-----------------------|
| No. | Districts and towns. | Population according to Census of 1921. | Births. | | | Birth rate. | Cholera. | Small-pox. | Plague. | Fever. | Dysentery and diarrhoea. | Respiratory diseases. |
| | | | Male. | Female. | Total. | | | | | | | |
| TOWNS—concd. ASSAM VALLEY. | | | | | | | | | | | | |
| 8 | Dhubri ... | 6,707 | 123 | 112 | 235 | 35.04 | 2 | 2 | ... | 5 | 15 | 12 |
| 9 | Goalpara ... | 6,212 | 81 | 74 | 155 | 24.95 | 3 | 6 | ... | 41 | 7 | 10 |
| 10 | Gauripur ... | 4,311 | 112 | 119 | 231 | 53.58 | 3 | 13 | ... | 57 | 13 | 15 |
| 11 | Gauhati ... | 16,480 | 273 | 228 | 501 | 30.40 | 6 | ... | ... | 62 | 42 | 21 |
| 12 | Barpeta ... | 11,730 | 294 | 258 | 552 | 47.06 | 8 | ... | ... | 107 | 43 | 23 |
| 13 | Palaabari ... | 2,739 | 7 | 72 | 139 | 50.75 | 1 | ... | ... | 20 | 8 | 4 |
| 14 | Tezpur ... | 7,341 | 123 | 110 | 233 | 31.74 | ... | ... | ... | 60 | 37 | 60 |
| 15 | Mangaldai ... | 1,023 | 9 | 13 | 22 | 21.51 | 1 | ... | ... | 15 | 5 | 1 |
| 16 | Nowgong ... | 6,885 | 160 | 165 | 325 | 47.20 | ... | ... | ... | 35 | 38 | 52 |
| 17 | Jorhat ... | 6,626 | 105 | 94 | 199 | 30.03 | 1 | ... | ... | 26 | 22 | 24 |
| 18 | Sibsagar ... | 5,329 | 105 | 85 | 190 | 35.65 | ... | ... | ... | 49 | 13 | 11 |
| 19 | Golaghat ... | 3,655 | 63 | 65 | 128 | 35.02 | ... | ... | ... | 56 | 3 | 16 |
| 20 | Nazira... .. | 2,632 | 52 | 49 | 101 | 38.37 | 1 | ... | ... | 48 | 4 | 3 |
| 21 | Dibrugarh ... | 16,007 | 242 | 239 | 481 | 30.05 | ... | 2 | ... | 56 | 67 | 82 |
| 22 | North Lakhimpur ... | 1,966 | 32 | 25 | 57 | 28.99 | ... | ... | ... | 11 | 3 | 3 |
| 23 | Doom Dooma ... | 1,162 | 14 | 12 | 26 | 22.38 | ... | 2 | ... | 18 | 13 | 15 |
| 24 | Tinsukia ... | 3,080 | 60 | 46 | 106 | 34.41 | ... | ... | ... | 24 | 8 | 1 |
| Total ... | | 103,885 | 1,915 | 1,766 | 3,681 | 35.43 | 26 | 25 | ... | 691 | 361 | 353 |
| Total for the towns... | | 151,914 | 2,602 | 2,457 | 5,059 | 33.30 | 51 | 25 | ... | 890 | 471 | 461 |
| Total for the province ... | | 6,832,242 | 110,400 | 104,435 | 214,835 | 31.35 | 6,332 | 1,208 | ... | 89,772 | 9,520 | 5,819 |

Supplementary (optional) Statement

| Towns | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
|-----------|-----|----------|--------|----------------|--------|----------|--------|------------------|--------|------------|--------|---------------|--------|
| | | Malaria. | | Enteric fever. | | Measles. | | Relapsing fever. | | Kala azar. | | Other fevers. | |
| | | Deaths. | Ratio. | Deaths. | Ratio. | Deaths. | Ratio. | Deaths. | Ratio. | Deaths. | Ratio. | Deaths. | Ratio. |
| Silchar | ... | 31 | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | 12 | ... |
| Sylhet | ... | 25 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | ... |
| Habiganj | ... | 2 | ... | 3 | ... | ... | ... | ... | ... | 5 | ... | 20 | ... |
| Karimganj | ... | 20 | ... | ... | ... | ... | ... | ... | ... | 3 | ... | 1 | ... |
| Gauhati | ... | 5 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 53 | ... |
| Barpeta | ... | 11 | ... | 2 | ... | ... | ... | ... | ... | 3 | ... | 91 | ... |
| Dhubri | ... | 4 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... |
| Goalpara | ... | 29 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 12 | ... |
| Tezpur | ... | 23 | ... | 2 | ... | ... | ... | ... | ... | 6 | ... | 29 | ... |
| Nowgong | ... | 5 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 31 | ... |
| Jorhat | ... | 4 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 21 | ... |
| Dibrugarh | ... | 3 | ... | 2 | ... | ... | ... | ... | ... | 2 | ... | 48 | ... |
| Shillong | ... | 12 | ... | 16 | ... | ... | ... | 1 | ... | ... | ... | 14 | ... |

in the districts and towns of the province of Assam during the year 1930—concluded.

| 11 | | | | 12 | | 13 | | | | 14 | | | | 15 | | | | |
|-----------|---------|----------------------|---------|--------------------------|--------|--|---------|----------|------------|---------|--------|--------------------------|-----------------------|-----------|-------------------|------------------|------------------------------|---------|
| Injuries. | | | | | | Ratio of deaths per 1,000 of population. | | | | | | | | | | | | |
| Suicide. | | Wounds or accidents. | Rabies. | Snakes and wild animals. | Total. | All other causes. | Total. | Cholera. | Small-pox. | Plague. | Fever. | Dysentery and diarrhoea. | Respiratory diseases. | Injuries. | All other causes. | From all causes. | | Number. |
| Male. | Female. | | | | | | | | | | | | | | | For the year. | Mean of previous five years. | |
| ... | ... | 9 | ... | 2 | 11 | 103 | 150 | 30 | 30 | ... | 75 | 2.23 | 1.79 | 1.64 | 15.36 | 22.36 | 26.24 | 8 |
| ... | ... | 1 | ... | ... | 1 | 30 | 98 | 48 | 97 | ... | 6.60 | 1.13 | 1.61 | 1.16 | 4.83 | 15.78 | 19.64 | 9 |
| 1 | ... | ... | ... | ... | 1 | 47 | 149 | 70 | 3.02 | ... | 13.22 | 3.02 | 3.48 | 2.3 | 10.90 | 34.56 | 25.28 | 10 |
| ... | ... | ... | ... | ... | ... | 148 | 279 | 36 | ... | ... | 3.76 | 2.55 | 1.27 | ... | 8.98 | 16.93 | 24.03 | 11 |
| 1 | ... | 8 | ... | ... | 9 | 83 | 273 | 63 | ... | ... | 9.12 | 3.67 | 1.96 | 7.7 | 7.08 | 23.27 | 27.37 | 12 |
| ... | ... | 1 | ... | ... | 1 | 19 | 53 | 36 | ... | ... | 7.20 | 2.92 | 1.46 | 3.6 | 6.94 | 19.35 | 6.94 | 13 |
| ... | ... | 10 | ... | ... | 10 | 76 | 263 | ... | ... | ... | 8.17 | 7.76 | 8.17 | 1.36 | 10.35 | 35.83 | 31.06 | 14 |
| 1 | ... | 1 | ... | ... | 2 | 11 | 35 | 98 | ... | ... | 14.66 | 4.89 | 9.8 | 1.95 | 10.75 | 24.21 | 24.44 | 15 |
| ... | ... | 9 | ... | ... | 9 | 65 | 200 | ... | ... | ... | 5.23 | 3.52 | 7.55 | 1.34 | 9.44 | 29.05 | 25.42 | 16 |
| ... | ... | 4 | ... | ... | 4 | 69 | 146 | 15 | ... | ... | 3.92 | 3.92 | 3.62 | 6.0 | 10.41 | 22.03 | 18.41 | 17 |
| ... | ... | 1 | ... | ... | 1 | 7 | 81 | ... | ... | ... | 9.19 | 2.44 | 2.06 | 1.9 | 1.31 | 15.20 | 18.01 | 18 |
| ... | ... | 3 | 1 | ... | 4 | 21 | 100 | ... | ... | ... | 15.32 | 8.2 | 4.38 | 1.09 | 5.75 | 27.36 | 19.70 | 19 |
| ... | ... | 1 | ... | ... | 1 | 4 | 61 | 38 | ... | ... | 18.24 | 1.52 | 1.14 | 3.3 | 1.52 | 23.18 | 23.55 | 20 |
| ... | ... | 11 | 1 | ... | 12 | 155 | 374 | ... | 12 | ... | 3.50 | 4.19 | 5.12 | 7.5 | 9.68 | 23.36 | 21.67 | 21 |
| ... | ... | ... | ... | ... | ... | 25 | 42 | ... | ... | ... | 5.60 | 1.53 | 1.53 | ... | 12.71 | 21.36 | 28.48 | 22 |
| ... | ... | ... | ... | ... | ... | 1 | 49 | ... | 1.72 | ... | 15.49 | 11.19 | 12.91 | ... | 8.8 | 42.17 | 25.82 | 23 |
| ... | ... | ... | ... | ... | ... | 8 | 41 | ... | ... | ... | 7.79 | 2.60 | 3.02 | ... | 2.60 | 13.31 | 13.96 | 24 |
| 3 | ... | 59 | 2 | 2 | 63 | 872 | 2,394 | 25 | 24 | ... | 6.65 | 3.47 | 3.40 | 6.4 | 8.39 | 23.04 | 23.11 | |
| 4 | ... | 83 | 3 | 2 | 92 | 1,282 | 3,272 | 34 | 16 | ... | 5.86 | 3.10 | 3.03 | 6.0 | 8.44 | 21.54 | 22.06 | |
| 154 | 86 | 1,409 | 52 | 224 | 1,925 | 32,003 | 146,619 | 92 | 18 | ... | 13.10 | 1.39 | 8.6 | 2.8 | 4.07 | 21.40 | 22.42 | |

VI(a) for the year 1930.

| 7 | | 8 | | 9 | | 10 | | 11 | | 12 | Deaths under one year. | | | Infant mortality rate. |
|------------|--------|------------|--------|------------|--------|-----------|--------|-----------------------------|--------|--------------------------|------------------------|---------|--------|------------------------|
| Dysentery. | | Diarrhoea. | | Pneumonia. | | Phthisis. | | Other respiratory diseases. | | Deaths from child-birth. | | | | |
| Deaths. | Ratio. | Deaths. | Ratio. | Deaths. | Ratio. | Deaths. | Ratio. | Deaths. | Ratio. | | Male. | Female. | Total. | |
| 13 | ... | 6 | ... | 9 | ... | 1 | ... | 4 | ... | 6 | 10 | 6 | 16 | 86.02 |
| 20 | ... | 13 | ... | 5 | ... | 1 | ... | 63 | ... | 13 | 52 | 44 | 96 | 179.11 |
| 11 | ... | 7 | ... | 1 | ... | ... | ... | 12 | ... | 1 | 24 | 17 | 41 | 225.27 |
| 3 | ... | 3 | ... | 1 | ... | ... | ... | 4 | ... | 2 | 10 | 13 | 23 | 203.54 |
| 30 | ... | 12 | ... | 16 | ... | 1 | ... | 4 | ... | 9 | 45 | 26 | 71 | 141.72 |
| 30 | ... | 13 | ... | 14 | ... | 9 | ... | ... | ... | 3 | 49 | 34 | 83 | 150.36 |
| 13 | ... | 2 | ... | 8 | ... | 1 | ... | 3 | ... | 3 | 19 | 21 | 40 | 170.21 |
| 5 | ... | 2 | ... | 7 | ... | ... | ... | 3 | ... | 1 | 9 | 22 | 31 | 200.00 |
| 37 | ... | 20 | ... | 26 | ... | 15 | ... | 19 | ... | 11 | 17 | 26 | 43 | 184.55 |
| 38 | ... | ... | ... | ... | ... | ... | ... | 52 | ... | 6 | 30 | 27 | 57 | 175.38 |
| 17 | ... | 5 | ... | 14 | ... | 2 | ... | 8 | ... | 1 | 23 | 15 | 38 | 190.95 |
| 58 | ... | 9 | ... | 12 | ... | 6 | ... | 64 | ... | 16 | 29 | 24 | 53 | 110.19 |
| 6 | ... | 3 | ... | 28 | ... | 7 | ... | 8 | ... | ... | 32 | 19 | 51 | 97.14 |

IMPERIAL STATEMENT No. VII.—Deaths registered from Cholera in the

| Number. | Districts. | Circles of Registration. | | Villages. | | January. | February. | March. | April. | May. |
|---------------|------------------------|--------------------------|--|--------------------------|--|----------|-----------|--------|--------|------|
| | | Number in each district. | Number from which deaths from cholera were reported. | Number in each district. | Number from which deaths from cholera were reported. | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| SURMA VALLEY. | | | | | | | | | | |
| 1 | Cachar ... | 12 | 8 | 1,103 | 46 | 11 | 2 | 7 | 26 | 19 |
| 2 | Sylhet ... | 40 | 37 | 10,781 | 905 | 846 | 241 | 153 | 143 | 195 |
| | Total ... | 52 | 45 | 11,884 | 951 | 857 | 243 | 160 | 169 | 214 |
| ASSAM VALLEY. | | | | | | | | | | |
| 3 | Goalpara ... | 18 | 15 | 2,137 | 270 | 34 | 3 | 11 | 18 | 9 |
| 4 | Kamrup ... | 16 | 15 | 1,954 | 109 | 7 | 8 | 17 | 94 | 95 |
| 5 | Darrang ... | 13 | 9 | 1,406 | 99 | 3 | 19 | 3 | 9 | 21 |
| 6 | Nowgong ... | 10 | 6 | 1,495 | 10 | 5 | 4 | 2 | 5 | 18 |
| 7 | Sibsagar ... | 17 | 9 | 2,143 | 48 | 1 | ... | 6 | 3 | 11 |
| 8 | Lakhimpur ... | 15 | 6 | 1,702 | 13 | 2 | ... | 4 | 6 | 5 |
| | Total ... | 89 | 60 | 10,837 | 549 | 52 | 34 | 43 | 135 | 159 |
| | Total for the Province | 141 | 105 | 22,721 | 1,500 | 909 | 277 | 203 | 304 | 373 |

IMPERIAL STATEMENT No. VIII.—Deaths registered from

| Number. | Districts. | Circles of Registration. | | Villages. | | January. | February. | March. | April. | May. | June. | July. |
|---------------|------------------------|--------------------------|--|--------------------------|--|----------|-----------|--------|--------|------|-------|-------|
| | | Number in each district. | Number from which deaths from small-pox were reported. | Number in each district. | Number from which deaths from small-pox were reported. | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| SURMA VALLEY. | | | | | | | | | | | | |
| 1 | Cachar ... | 12 | 4 | 1,103 | 30 | 4 | 2 | 2 | 4 | 2 | 4 | 5 |
| 2 | Sylhet ... | 40 | 21 | 10,781 | 76 | 20 | 4 | 7 | 21 | 17 | 20 | 6 |
| | Total ... | 52 | 25 | 11,884 | 106 | 24 | 6 | 9 | 25 | 19 | 24 | 11 |
| ASSAM VALLEY. | | | | | | | | | | | | |
| 3 | Goalpara ... | 18 | 13 | 2,137 | 123 | 9 | 27 | 47 | 52 | 84 | 113 | 32 |
| 4 | Kamrup ... | 16 | 11 | 1,954 | 9 | 2 | 4 | 16 | 50 | 62 | 37 | 22 |
| 5 | Darrang ... | 13 | 9 | 1,406 | 47 | 2 | 9 | 2 | 11 | 8 | 24 | 9 |
| 6 | Nowgong ... | 10 | 1 | 1,495 | 1 | 1 | ... | ... | ... | ... | ... | ... |
| 7 | Sibsagar ... | 17 | 8 | 2,143 | 19 | ... | ... | ... | ... | 12 | 2 | 6 |
| 8 | Lakhimpur ... | 15 | 7 | 1,702 | 52 | 27 | 16 | 34 | 26 | 44 | 38 | 11 |
| | Total ... | 89 | 48 | 10,837 | 251 | 41 | 56 | 101 | 139 | 210 | 214 | 80 |
| | Total for the Province | 141 | 73 | 22,721 | 357 | 65 | 62 | 110 | 164 | 229 | 238 | 91 |

districts of Assam during each month of the year 1930.

| June. | July. | August. | September. | October. | November. | December. | Total. | | | Ratio of deaths per 1,000 of population. | | | Mean ratio per 1,000 of previous five years. | Number. |
|-------|-------|---------|------------|----------|-----------|-----------|--------|---------|--------|--|---------|--------|--|---------|
| | | | | | | | Male. | Female. | Total. | Male. | Female. | Total. | | |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 11 | 1 | 2 | 1 | 1 | ... | 1 | 53 | 30 | 82 | ·30 | ·13 | ·16 | ·60 | 1 |
| 113 | 64 | 32 | 149 | 297 | 700 | 838 | 2,067 | 1,704 | 3,771 | 1·58 | 1·38 | 1·48 | 1·52 | 2 |
| 124 | 65 | 34 | 150 | 298 | 700 | 839 | 2,119 | 1,734 | 3,853 | 1·35 | 1·18 | 1·27 | 1·40 | |
| 2 | ... | 5 | 16 | 130 | 506 | 422 | 618 | 538 | 1,156 | 1·52 | 1·51 | 1·52 | 1·52 | 3 |
| 38 | 93 | 60 | 122 | 119 | 96 | 171 | 455 | 465 | 920 | 1·15 | 1·37 | 1·21 | 2·26 | 4 |
| 30 | 12 | 10 | 1 | 11 | 12 | 63 | 101 | 93 | 194 | ·40 | ·41 | ·41 | 1·30 | 5 |
| ... | 11 | 1 | ... | 4 | 3 | ... | 21 | 32 | 53 | ·10 | ·17 | ·13 | 2·05 | 6 |
| 20 | 14 | 8 | 7 | 13 | 12 | 2 | 51 | 46 | 97 | ·12 | ·12 | ·12 | ·64 | 7 |
| 10 | 7 | 7 | ... | 12 | 5 | 1 | 28 | 31 | 59 | ·09 | ·11 | ·10 | ·35 | 8 |
| 100 | 137 | 91 | 146 | 289 | 634 | 650 | 1,274 | 1,205 | 2,479 | ·63 | ·67 | ·65 | 1·33 | |
| 224 | 202 | 125 | 296 | 587 | 1,334 | 1,408 | 3,306 | 2,930 | 6,236 | ·95 | ·90 | ·92 | 1·36 | |

Small-pox in the districts of Assam during each month of the year 1930.

| August. | September. | October. | November. | December. | Total. | | | Number of deaths among children. | | Ratio of deaths per 1,000 of population. | | | Mean ratio per 1,000 of previous five years. | Number. |
|---------|------------|----------|-----------|-----------|--------|---------|--------|----------------------------------|------------------|--|---------|--------|--|---------|
| | | | | | Male. | Female. | Total. | Under 1 year. | One to 10 years. | Male. | Female. | Total. | | |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 3 | 2 | ... | 2 | 1 | 18 | 13 | 31 | 17 | 5 | ·07 | ·05 | ·06 | ·45 | 1 |
| 10 | 3 | 3 | 4 | 14 | 70 | 59 | 129 | 37 | 13 | ·05 | ·05 | ·05 | ·70 | 2 |
| 13 | 5 | 3 | 6 | 15 | 88 | 72 | 160 | 54 | 18 | ·06 | ·05 | ·11 | ·06 | |
| 48 | 27 | 22 | 15 | 11 | 277 | 210 | 487 | 29 | 20 | ·08 | ·09 | ·64 | ·79 | 3 |
| 7 | 1 | 8 | 21 | ... | 116 | 116 | 232 | 68 | 111 | ·29 | ·32 | ·30 | ·69 | 4 |
| 11 | 1 | 1 | ... | 2 | 42 | 38 | 80 | 7 | 12 | ·17 | ·17 | ·17 | ·18 | 5 |
| ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 1 | ... | ·005 | ·003 | ·03 | 6 |
| ... | ... | ... | 1 | 1 | 7 | 15 | 22 | ... | ... | ·02 | ·04 | ·03 | 1·45 | 7 |
| 1 | 7 | 7 | 14 | 1 | 128 | 98 | 226 | ... | ... | ·41 | ·36 | ·39 | ·27 | 8 |
| 67 | 36 | 38 | 51 | 15 | 570 | 478 | 1,048 | 104 | 144 | ·28 | ·27 | ·28 | ·67 | |
| 80 | 41 | 41 | 57 | 30 | 638 | 550 | 1,208 | 158 | 162 | ·18 | ·17 | ·18 | ·67 | |

IMPERIAL STATEMENT No. IX.—Deaths registered from Fevers

| Number. | Districts. | Circles of Registration. | | Villages. | | January. | February. | March. | April. | May. |
|---------------|----------------------------|--------------------------|---|--------------------------|---|----------|-----------|--------|--------|-------|
| | | Number in each district. | Number from which deaths from fevers were reported. | Number in each district. | Number from which deaths from fevers were reported. | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| SURMA VALLEY. | | | | | | | | | | |
| 1 | Cachar | 12 | 12 | 1,103 | 5,034 | 479 | 368 | 308 | 459 | 532 |
| 2 | Sylhet | 40 | 39 | 10,781 | 8,425 | 2,974 | 2,394 | 1,660 | 2,144 | 2,344 |
| | Total | 52 | 51 | 11,884 | 13,459 | 3,453 | 2,762 | 1,968 | 2,603 | 2,876 |
| ASSAM VALLEY. | | | | | | | | | | |
| 3 | Goalpara | 18 | 17 | 2,137 | 2,137 | 1,617 | 1,132 | 1,008 | 1,081 | 1,562 |
| 4 | Kamrup | 16 | 16 | 1,954 | 633 | 692 | 487 | 557 | 700 | 1,002 |
| 5 | Darrang | 13 | 12 | 1,406 | 1,366 | 554 | 373 | 435 | 406 | 923 |
| 6 | Nowgong | 10 | 10 | 1,495 | 73 | 375 | 258 | 348 | 358 | 540 |
| 7 | Sibsagar | 17 | 17 | 2,143 | 1,225 | 617 | 447 | 388 | 400 | 864 |
| 8 | Lakhimpur | 15 | 15 | 1,702 | 1,370 | 345 | 427 | 447 | 345 | 628 |
| | Total | 89 | 87 | 10,837 | 6,804 | 4,200 | 3,124 | 3,183 | 3,200 | 5,519 |
| | Total for the Province ... | 141 | 138 | 22,721 | 20,263 | 7,653 | 5,886 | 5,151 | 5,803 | 8,395 |

IMPERIAL STATEMENT No. X.—Deaths registered from

| Number. | Districts. | Circles of Registration. | | Villages. | | January. | February. | March. | April. | May. |
|---------------|----------------------------|--------------------------|--|--------------------------|--|----------|-----------|--------|--------|------|
| | | Number in each district. | Number from which deaths from dysentery and diarrhoea were reported. | Number in each district. | Number from which deaths from dysentery and diarrhoea were reported. | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| SURMA VALLEY. | | | | | | | | | | |
| 1 | Cachar | 12 | 11 | 1,103 | 470 | 92 | 74 | 54 | 103 | 126 |
| 2 | Sylhet | 40 | 39 | 10,781 | 2,565 | 407 | 270 | 165 | 179 | 199 |
| | Total | 52 | 50 | 11,884 | 1,735 | 499 | 344 | 219 | 282 | 325 |
| ASSAM VALLEY. | | | | | | | | | | |
| 3 | Goalpara | 18 | 16 | 2,137 | 144 | 10 | 4 | 10 | 9 | 27 |
| 4 | Kamrup | 16 | 16 | 1,954 | 78 | 14 | 25 | 24 | 51 | 74 |
| 5 | Darrang | 13 | 12 | 1,406 | 247 | 38 | 28 | 24 | 36 | 104 |
| 6 | Nowgong | 10 | 8 | 1,495 | 25 | 18 | 7 | 9 | 17 | 14 |
| 7 | Sibsagar | 17 | 16 | 2,143 | 409 | 108 | 68 | 70 | 64 | 151 |
| 8 | Lakhimpur | 15 | 15 | 1,702 | 125 | 67 | 43 | 61 | 78 | 121 |
| | Total | 89 | 83 | 10,837 | 1,028 | 255 | 175 | 198 | 255 | 491 |
| | Total for the Province ... | 141 | 133 | 22,721 | 2,763 | 754 | 519 | 417 | 537 | 816 |

in the districts of Assam during each month of the year 1930.

| June. | July. | August. | September. | October. | November. | December. | Total. | | | Ratio of deaths per 1,000 of population. | | | Mean ratio per 1,000 of previous five years. | Number. |
|-------|-------|---------|------------|----------|-----------|-----------|--------|---------|--------|--|---------|--------|--|---------|
| | | | | | | | Male. | Female. | Total. | Male. | Female. | Total. | | |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 550 | 622 | 461 | 413 | 421 | 385 | 582 | 2,914 | 2,666 | 5,580 | 11.14 | 11.16 | 11.15 | 10.44 | 1 |
| 2,002 | 2,702 | 2,469 | 2,421 | 2,690 | 2,619 | 2,894 | 15,759 | 13,544 | 29,303 | 12.04 | 10.99 | 11.53 | 12.19 | 2 |
| 2,552 | 3,324 | 2,930 | 2,834 | 3,101 | 3,004 | 3,476 | 18,673 | 16,210 | 34,883 | 11.89 | 11.02 | 11.47 | 12.23 | |
| 1,414 | 1,562 | 1,450 | 1,228 | 1,459 | 1,291 | 1,520 | 8,922 | 7,411 | 16,333 | 21.92 | 20.82 | 21.42 | 23.35 | 3 |
| 1,052 | 952 | 777 | 630 | 678 | 777 | 767 | 4,737 | 4,334 | 9,071 | 11.92 | 11.86 | 11.89 | 12.67 | 4 |
| 869 | 696 | 574 | 683 | 727 | 507 | 749 | 3,923 | 3,573 | 7,496 | 15.52 | 15.91 | 15.70 | 15.03 | 5 |
| 541 | 933 | 835 | 611 | 418 | 511 | 328 | 3,113 | 2,943 | 6,056 | 14.91 | 15.55 | 15.22 | 13.67 | 6 |
| 785 | 1,063 | 862 | 750 | 749 | 880 | 751 | 4,394 | 4,162 | 8,556 | 10.13 | 10.69 | 10.39 | 9.28 | 7 |
| 667 | 849 | 845 | 752 | 652 | 695 | 725 | 3,907 | 3,470 | 7,377 | 12.49 | 12.68 | 12.58 | 9.95 | 8 |
| 5,328 | 6,055 | 5,343 | 4,654 | 4,683 | 4,661 | 4,849 | 28,996 | 25,803 | 54,889 | 14.41 | 14.40 | 14.40 | 14.06 | |
| 7,880 | 9,379 | 8,273 | 7,488 | 7,784 | 7,665 | 8,325 | 47,669 | 42,103 | 89,772 | 13.31 | 12.88 | 13.10 | 13.25 | |

Dysentery and Diarrhœa in the districts of Assam during each month of the year 1930.

| June. | July. | August. | September. | October. | November. | December. | Total. | | | Ratio of deaths per 1,000 of population. | | | Mean ratio per 1,000 of previous five years. | Number. |
|-------|-------|---------|------------|----------|-----------|-----------|--------|---------|--------|--|---------|--------|--|---------|
| | | | | | | | Male. | Female. | Total. | Male. | Female. | Total. | | |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 120 | 91 | 66 | 82 | 114 | 134 | 126 | 563 | 619 | 1,182 | 2.15 | 2.39 | 2.36 | 2.32 | 1 |
| 205 | 231 | 191 | 222 | 318 | 363 | 346 | 1,661 | 1,435 | 3,096 | 1.27 | 1.16 | 1.22 | 1.38 | 2 |
| 325 | 322 | 257 | 304 | 432 | 497 | 472 | 2,224 | 2,054 | 4,278 | 1.42 | 1.40 | 1.41 | 1.53 | |
| 118 | 24 | 16 | 24 | 30 | 14 | 9 | 173 | 122 | 295 | .43 | .34 | .39 | .32 | 3 |
| 80 | 64 | 43 | 32 | 47 | 40 | 32 | 300 | 226 | 526 | .76 | .62 | .69 | .77 | 4 |
| 110 | 84 | 67 | 90 | 84 | 89 | 74 | 473 | 375 | 848 | 1.87 | 1.67 | 1.78 | 1.95 | 5 |
| 32 | 24 | 27 | 34 | 46 | 24 | 25 | 160 | 117 | 277 | .77 | .62 | .70 | .72 | 6 |
| 214 | 204 | 245 | 139 | 218 | 208 | 166 | 999 | 886 | 1,885 | 2.30 | 2.28 | 2.29 | 1.88 | 7 |
| 177 | 111 | 93 | 166 | 205 | 167 | 122 | 794 | 617 | 1,411 | 2.54 | 2.25 | 2.41 | 2.14 | 8 |
| 731 | 511 | 511 | 485 | 600 | 542 | 428 | 2,899 | 2,343 | 5,242 | 1.44 | 1.30 | 1.38 | 1.27 | |
| 1,056 | 833 | 768 | 789 | 1,092 | 1,039 | 909 | 5,123 | 4,397 | 9,520 | 1.43 | 1.34 | 1.39 | 1.39 | |

IMPERIAL STATEMENT No. XI.—Deaths registered from

| Number. | Districts. | Circles of Registration. | | Villages. | | January. | February. | March. | April. | May. |
|---------|----------------------------|--------------------------|---|--------------------------|---|----------|-----------|--------|--------|------|
| | | Number in each district. | Number from which deaths from respiratory diseases were reported. | Number in each district. | Number from which deaths from respiratory diseases were reported. | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| | SURMA VALLEY. | | | | | | | | | |
| 1 | Cachar ... | 12 | 12 | 1,103 | 167 | 76 | 82 | 82 | 81 | 87 |
| 2 | Sylhet ... | 40 | 38 | 10,781 | 596 | 132 | 149 | 88 | 108 | 105 |
| | Total ... | 52 | 50 | 11,884 | 763 | 208 | 231 | 170 | 189 | 192 |
| | ASSAM VALLEY. | | | | | | | | | |
| 3 | Goalpara ... | 18 | 14 | 2,137 | 79 | 9 | 10 | 11 | 7 | 9 |
| 4 | Kamrup ... | 16 | 15 | 1,954 | 26 | 33 | 12 | 28 | 23 | 25 |
| 5 | Darrang ... | 13 | 12 | 1,406 | 97 | 40 | 70 | 58 | 40 | 54 |
| 6 | Nowgong ... | 10 | 10 | 1,495 | 19 | 16 | 13 | 17 | 13 | 19 |
| 7 | Sibsagar ... | 17 | 16 | 2,143 | 117 | 109 | 93 | 81 | 98 | 95 |
| 8 | Lakhimpur ... | 15 | 13 | 1,702 | 62 | 120 | 122 | 127 | 104 | 63 |
| | Total ... | 89 | 80 | 10,837 | 400 | 327 | 320 | 322 | 285 | 285 |
| | Total for the Province ... | 141 | 130 | 22,721 | 1,163 | 535 | 551 | 492 | 474 | 477 |

IMPERIAL STATEMENT No. XII.—Deaths registered from plague

| Number. | Districts. | Circles of Registration. | | Villages. | | January. | February. | March. | April. | May. |
|---------|----------------------------|--------------------------|---|--------------------------|---|----------|-----------|--------|--------|------|
| | | Number in each district. | Number from which deaths from plague were reported. | Number in each district. | Number from which deaths from plague were reported. | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| | SURMA VALLEY. | | | | | | | | | |
| 1 | Cachar ... | 12 | ... | 1,103 | ... | ... | ... | ... | ... | ... |
| 2 | Sylhet ... | 40 | ... | 10,781 | ... | ... | ... | ... | ... | ... |
| | Total ... | 52 | ... | 11,884 | ... | ... | ... | ... | ... | ... |
| | ASSAM VALLEY. | | | | | | | | | |
| 3 | Goalpara ... | 18 | ... | 2,137 | ... | ... | ... | ... | ... | ... |
| 4 | Kamrup ... | 16 | ... | 1,954 | ... | ... | ... | ... | ... | ... |
| 5 | Darrang ... | 13 | ... | 1,406 | ... | ... | ... | ... | ... | ... |
| 6 | Nowgong ... | 10 | ... | 1,495 | ... | ... | ... | ... | ... | ... |
| 7 | Sibsagar ... | 17 | ... | 2,143 | ... | ... | ... | ... | ... | ... |
| 8 | Lakhimpur ... | 15 | ... | 1,702 | ... | ... | ... | ... | ... | ... |
| | Total ... | 89 | ... | 10,837 | ... | ... | ... | ... | ... | ... |
| | Total for the Province ... | 141 | ... | 22,721 | ... | ... | ... | ... | ... | ... |

APPENDIX II.

PROVINCIAL.

Statement showing details of registration in compulsory areas.

| Compulsory registration area. | Population according to Census of 1921. | Estimated births at 288 per 1,000 married women between the ages of 15 and 40. | Number of births registered during the year. | Estimated birth-rate per mille. | Registered birth-rate per mille. | Number of deaths registered during the year. | | Death-rate per mille. | | Number of prosecutions under Act IV (B.C.) of 1873. | Number of convictions. |
|-------------------------------|---|--|--|---------------------------------|----------------------------------|--|--------------------------------|--------------------------------|--------------------------------|---|------------------------|
| | | | | | | Including deaths in hospitals. | Excluding deaths in hospitals. | Including deaths in hospitals. | Excluding deaths in hospitals. | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Silchar | 10,204 | | 186 | | 18.23 | 132 | 103 | 12.94 | 10.09 | 9 | 9 |
| Hailakandi | 2,228 | | 59 | | 26.48 | 34 | 27 | 15.26 | 12.12 | 3 | 3 |
| Sylhet | 16,912 | | 536 | | 31.69 | 316 | 272 | 18.68 | 10.17 | 20 | 13 |
| Karimganj | 4,552 | | 113 | | 24.82 | 81 | 66 | 17.79 | 14.50 | 22 | 15 |
| Maulvi Bazar | 3,334 | | 135 | | 40.49 | 65 | 60 | 19.80 | 17.99 | 10 | 10 |
| Habiganj | 5,918 | | 132 | | 30.75 | 143 | 136 | 24.16 | 21.29 | 13 | 12 |
| Sunamganj | 4,881 | | 167 | | 34.21 | 106 | 94 | 21.71 | 19.25 | 12 | 4 |
| Dhubri | 6,707 | | 235 | | 35.04 | 150 | 111 | 22.36 | 16.55 | ... | ... |
| Goalpara | 6,212 | | 155 | | 24.95 | 98 | 67 | 15.78 | 15.54 | 15 | 15 |
| Gauripur | 4,311 | Not available. | 231 | Not available. | 53.58 | 149 | 149 | 34.56 | 34.56 | 6 | 4 |
| Gauhati | 16,480 | | 501 | | 30.40 | 279 | 191 | 16.93 | 11.59 | 20 | 20 |
| Barpeta | 11,730 | | 552 | | 47.06 | 273 | 252 | 23.27 | 21.48 | ... | ... |
| Palashbari | 2,739 | | 139 | | 50.75 | 53 | 53 | 19.35 | 19.35 | ... | ... |
| Tezpur | 7,341 | | 233 | | 31.74 | 263 | 195 | 35.83 | 26.56 | 17 | 14 |
| Mangaldai | 1,023 | | 22 | | 21.51 | 35 | 19 | 34.21 | 18.57 | 2 | 2 |
| Newgong | 6,885 | | 325 | | 47.20 | 200 | 158 | 29.05 | 22.95 | 20 | 19 |
| Sibsagar | 5,329 | | 190 | | 35.65 | 81 | 54 | 15.20 | 10.13 | 15 | 13 |
| Nazira | 2,632 | | 101 | | 38.37 | 61 | 61 | 23.18 | 23.18 | 21 | 21 |
| Jorhat | 6,626 | | 199 | | 30.03 | 146 | 103 | 22.03 | 15.54 | 17 | 4 |
| Golaghat | 3,655 | | 128 | | 35.02 | 100 | 75 | 27.36 | 20.52 | 10 | 6 |
| Dibrugarh | 16,007 | | 481 | | 30.05 | 374 | 217 | 23.36 | 13.56 | 4 | 4 |
| Doom Dooma | 1,162 | | 26 | | 22.38 | 49 | 49 | 42.17 | 42.17 | ... | ... |
| North Lakhimpur... | 1,966 | | 57 | | 28.99 | 42 | 33 | 21.36 | 16.79 | 8 | 8 |
| Tinsukia | 3,080 | | 106 | | 34.42 | 41 | 41 | 13.31 | 13.31 | 4 | 4 |
| Total | 151,914 | | 5,059 | | 30.30 | 3,272 | 2,576 | 21.54 | 16.96 | 248 | 200 |

A.—VACCINE

Statement No. I.—Showing particulars of Vaccinations in

| No. | District. | Population of district according to the census of 1921. | Average population per square mile. | Average number of vaccinators employed throughout the season. | Total number of persons vaccinated. | | | Average number of persons vaccinated by each vaccinator. | Primary | |
|---|--------------------------------|---|-------------------------------------|---|-------------------------------------|---------|---------|--|---------|-----------------|
| | | | | | | | | | Total. | Under one year. |
| 1 | 2 | 3 | 4 | 5 | 6 | | | 7 | 8 | 9 |
| SURMA VALLEY AND HILL DIVISION. | | | | | Male. | Female. | Total. | | | |
| 1 | Cachar | 529,301 | 148 | 29 | 19,592 | 12,093 | 31,685 | 1,093 | 11,921 | 1,171 |
| 2 | Sylhet | 2,541,341 | 472 | 116 | 96,196 | 79,818 | 176,014 | 1,517 | 93,400 | 12,699 |
| 3 | Khasi and Jaintia Hills | 243,263 | 40 | 9 | 9,946 | 10,641 | 20,587 | 2,287 | 8,616 | 2,048 |
| 4 | Naga Hills | 158,801 | 52 | 6 | 3,776 | 3,220 | 6,996 | 1,166 | 6,346 | 1,101 |
| 5 | Lushai Hills | 98,406 | 14 | 8 | 5,298 | 3,489 | 8,697 | 1,087 | 4,626 | 263 |
| Total of Surma Valley and Hill Division | | 3,571,112 | 141 | 168 | 134,718 | 109,261 | 243,979 | 1,452 | 124,909 | 17,282 |
| ASSAM VALLEY DIVISION. | | | | | | | | | | |
| 6 | Goalpara | 762,523 | 193 | 48 | 47,980 | 35,592 | 83,572 | 1,741 | 16,660 | 2,254 |
| 7 | Kamrup | 762,671 | 197 | 61 | 35,202 | 26,943 | 62,145 | 1,019 | 43,349 | 7,544 |
| 8 | Darrang | 477,442 | 164 | 38 | 27,006 | 20,578 | 47,584 | 1,252 | 17,439 | 2,467 |
| 9 | Nowgong | 398,007 | 108 | 27 | 19,033 | 13,329 | 32,362 | 1,199 | 25,514 | 5,242 |
| 10 | Sibsagar | 823,197 | 162 | 55 | 31,364 | 23,771 | 55,135 | 1,003 | 36,656 | 4,033 |
| 11 | Lakhimpur | 586,577 | 143 | 36 | 18,271 | 15,737 | 34,008 | 944 | 16,303 | 2,516 |
| 12 | Garo Hills | 179,140 | 57 | 7 | 12,350 | 10,945 | 23,295 | 3,328 | 8,292 | 4,127 |
| Total of Assam Valley Division | | 3,989,557 | 149 | 272 | 191,206 | 146,895 | 338,101 | 1,243 | 164,213 | 28,183 |
| 13 | Manipur State | 384,016 | 45 | 17 | 12,332 | 9,879 | 22,211 | 1,306 | 17,403 | 9,882 |
| 14 | Sadiya Frontier Tract | 41,249 | 106 | 6 | 5,009 | 3,212 | 8,221 | 1,370 | 5,688 | 80 |
| Total Vaccine Department | | 7,985,934 | 130 | 463 | 343,265 | 269,347 | 612,512 | 1,323 | 312,213 | 55,427 |
| Total Dispensaries | | ... | ... | ... | ... | ... | 6,640 | ... | 2,539 | 480 |
| Total tea-gardens by garden agencies | | ... | ... | ... | 16,955 | 15,697 | 32,652 | ... | 19,871 | 10,119 |
| Total Jails, Mental hospital, Police hospitals and Infectious Diseases hospitals. | | ... | ... | ... | 6,070 | 73 | 6,143 | ... | 293 | 4 |
| Total Railways | | ... | ... | ... | 1,996 | 251 | 2,247 | ... | 364 | 34 |
| Grand total | | 7,985,934 | 130 | 463 | 368,286 | 285,268 | 660,194 | 1,323 | 335,280 | 66,064 |

Sum

| 1 | Total number of persons vaccinated. | | Total number of operations performed. | |
|---|-------------------------------------|-----------------|---------------------------------------|-----------------|
| | Primary. | Re-vaccination. | Primary. | Re-vaccination. |
| 1 | 2 | 3 | 4 | 5 |
| By special staff (Statement I) | 312,213 | 300,299 | 312,213 | 300,299 |
| By dispensary staff (Statement III) | 2,539 | 4,101 | 2,539 | 4,101 |
| By other agencies—Tea-gardens, Railways, Jail hospitals, Police hospitals, Mental hospital and Infectious Diseases hospitals. | 20,528 | 20,514 | 20,528 | 20,514 |
| Total | 335,280 | 324,914 | 335,280 | 324,914 |

DEPARTMENT.

the Province of Assam during the year 1930-31.

| vaccination. | | | Re-vaccination. | | | Percentage of successful cases in which the results were known. | | Persons successfully vaccinated per 1,000 of population. | Percentage of unknown cases to total cases. | | Average annual number of persons successfully vaccinated during previous five years. | | Average annual number of deaths from small-pox during previous five years. | |
|-------------------------------|--------------------|----------|-----------------|-------------|----------|---|-----------------|--|---|-----------------|--|------------------|--|------------------|
| Successful. | | | | | | | | | | | | | | |
| Over one and under six years. | Total of all ages. | Unknown. | Total. | Successful. | Unknown. | Primary. | Re-vaccination. | | Primary. | Re-vaccination. | Number. | Ratio per 1,000. | Number. | Ratio per 1,000. |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 7,887 | 11,126 | 228 | 19,764 | 8,292 | 1,471 | 95.15 | 45.33 | 36.69 | 1.91 | 7.44 | 36,821 | 69.57 | 205 | .39 |
| 59,637 | 86,076 | 3,276 | 82,614 | 42,453 | 13,300 | 95.51 | 61.25 | 50.58 | 3.51 | .16 | 180,239 | 70.92 | 1,697 | .67 |
| 4,702 | 8,546 | 28 | 11,971 | 4,339 | 72 | 99.51 | 36.47 | 52.97 | 32 | .60 | 27,710 | 113.91 | 21 | .09 |
| 3,718 | 4,819 | 569 | 650 | 313 | 41 | 83.42 | 51.39 | 32.32 | 8.97 | 6.31 | 6,465 | 40.71 | ... | ... |
| 2,652 | 2,915 | 394 | 4,071 | 1,991 | 628 | 68.88 | 57.83 | 49.85 | 8.52 | 15.42 | 8,137 | 82.69 | ... | ... |
| 78,596 | 113,482 | 4,495 | 119,070 | 57,388 | 15,512 | 94.24 | 55.41 | 47.85 | 3.60 | 13.03 | 259,372 | 72.63 | 1,923 | .54 |
| 8,105 | 13,068 | 2,288 | 66,912 | 38,330 | 14,399 | 90.93 | 72.99 | 67.41 | 13.73 | 21.52 | 48,699 | 63.87 | 668 | .87 |
| 26,937 | 40,304 | 1,394 | 18,796 | 9,521 | 2,353 | 96.06 | 57.90 | 65.33 | 3.22 | 12.52 | 47,572 | 62.38 | 454 | .59 |
| 11,840 | 16,061 | 506 | 30,145 | 18,449 | 4,039 | 94.85 | 70.67 | 72.28 | 2.90 | 13.40 | 24,050 | 50.37 | 84 | .17 |
| 15,954 | 24,796 | 1 | 6,848 | 4,017 | 2 | 97.19 | 59.55 | 72.54 | .004 | .03 | 24,937 | 62.65 | 7 | .02 |
| 25,439 | 33,982 | 1,304 | 18,479 | 7,798 | 2,683 | 96.12 | 49.26 | 50.75 | 3.56 | 14.52 | 45,447 | 55.21 | 841 | 1.02 |
| 11,345 | 15,105 | 400 | 17,705 | 10,406 | 2,344 | 94.98 | 67.74 | 43.49 | 2.45 | 13.24 | 22,817 | 38.90 | 188 | .32 |
| 2,831 | 7,057 | 362 | 15,003 | 10,639 | 881 | 88.99 | 75.34 | 98.78 | 4.36 | 5.87 | 22,619 | 126.26 | 62 | .29 |
| 102,451 | 150,373 | 6,255 | 173,888 | 99,220 | 26,701 | 95.20 | 67.41 | 62.56 | 3.81 | 15.35 | 236,141 | 59.19 | 2,294 | .57 |
| 5,321 | 15,203 | 1,622 | 4,808 | 3,172 | 673 | 96.34 | 76.71 | 47.85 | 9.32 | 14.00 | 26,008 | 67.73 | ... | ... |
| 1,418 | 5,418 | 237 | 2,533 | 1,214 | 3 | 99.39 | 47.98 | 160.78 | 4.17 | .12 | 3,024 | 73.31 | 1 | .02 |
| 187,786 | 284,476 | 12,609 | 300,299 | 160,994 | 42,889 | 94.95 | 62.54 | 55.78 | 4.04 | 14.28 | 524,545 | 65.68 | 4,340 | .54 |
| 1,572 | 2,217 | 174 | 4,101 | 2,319 | 545 | 98.74 | 65.21 | ... | 6.85 | 13.29 | 7,347 | ... | ... | ... |
| 7,888 | 18,972 | 70 | 12,781 | 8,832 | 1,191 | 95.81 | 76.20 | ... | .35 | 9.31 | 49,142 | ... | ... | ... |
| 12 | 231 | 26 | 5,850 | 1,368 | 579 | 86.52 | 25.95 | ... | 8.87 | 9.90 | 1,885 | ... | ... | ... |
| 196 | 335 | 5 | 1,883 | 773 | 457 | 93.31 | 54.20 | ... | 1.37 | 24.27 | 848 | ... | ... | ... |
| 197,454 | 306,231 | 12,884 | 324,914 | 174,286 | 45,661 | 94.99 | 62.41 | 60.17 | 3.84 | 14.05 | 583,767 | 73.10 | 4,340 | .54 |

mary.

| Percentage of successful cases in which results were known. | | Average number of persons vaccinated by each vaccinator. | | Number of children successfully vaccinated. | | Ratio of successful vaccination per 1,000 of population. | Total cost of Department. | Average cost of each successful case. |
|---|------------------|--|--|---|--------------------------|--|---------------------------|---------------------------------------|
| Primary. | Re-vaccinations. | Vaccinators employed. | Persons vaccinated by each vaccinator. | Under one year. | One and under six years. | | | |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 94.95 | 62.54 | 463 | 1,323 | 55,427 | 187,786 | 55.78 | Rs. a. p. 119,712 9 6 | Rs. a. p. 0 4 4 |
| 93.74 | 65.21 | ... | ... | 480 | 1,572 | ... | ... | ... |
| 95.65 | 60.00 | ... | ... | 10,157 | 8,096 | ... | ... | ... |
| 94.99 | 62.41 | 463 | 1,323 | 66,064 | 197,454 | 60.17 | 119,712 9 6 | 0 4 4 |

Statement No. II.—Showing the cost of Vaccination

| No. | District. | Expenditure | | | | | | | | | | | | |
|-----|-------------------------|-------------------------------|---------|-----------------------------|------------|-------------------|-------------|-----------------------|------|-----------|------|------------|------|-----------------------------|
| | | European supervising officer. | Pay. | Native supervising officer. | Pay. | Paid vaccinators. | Pay. | Licensed vaccinators. | Pay. | Clerks. | Pay. | From, etc. | Pay. | Total pay of establishment. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| | | Rs. a. p. | | Rs. a. p. | | Rs. a. p. | | Rs. a. p. | | Rs. a. p. | | Rs. a. p. | | Rs. a. p. |
| 1 | Cachar ... | ... | ... | 3 | 1,303 3 0 | 29 | 4,243 0 0 | ... | ... | ... | ... | ... | ... | 5,530 3 0 |
| 2 | Sylhet ... | ... | ... | 11 | 4,400 9 0 | 116 | 12,043 14 3 | ... | ... | ... | ... | ... | ... | 17,344 7 3 |
| 3 | Khasi and Jaintia Hills | ... | ... | 2 | 1,173 0 0 | 9 | 1,403 13 0 | ... | ... | ... | ... | ... | ... | 3,066 13 0 |
| 4 | Naga Hills | ... | ... | 1 | 403 6 0 | 6 | 1,224 8 0 | ... | ... | ... | ... | ... | ... | 1,632 14 0 |
| 5 | Lushai Hills | ... | ... | 1 | 402 0 0 | 8 | 1,008 0 0 | ... | ... | ... | ... | ... | ... | 1,410 0 0 |
| 6 | Goalpara ... | ... | ... | 3 | 1,475 1 0 | 48 | 8,171 1 0 | ... | ... | ... | ... | ... | ... | 9,646 2 0 |
| 7 | Kamrup ... | ... | ... | 3 | 1,748 4 0 | 61 | 6,168 13 0 | ... | ... | ... | ... | ... | ... | 7,917 1 0 |
| 8 | Darrang ... | ... | ... | 3 | 1,354 1 0 | 38 | 3,333 14 0 | ... | ... | ... | ... | ... | ... | 4,687 15 0 |
| 9 | Nowgong ... | ... | ... | 2 | 1,320 0 0 | 27 | 3,432 2 0 | ... | ... | ... | ... | ... | ... | 4,752 2 0 |
| 10 | Sibsagar ... | ... | ... | 5 | 2,438 0 0 | 55 | 7,371 3 0 | ... | ... | ... | ... | ... | ... | 9,809 3 0 |
| 11 | Lakhimpur | ... | ... | 3 | 1,716 0 0 | 36 | 4,978 4 0 | ... | ... | ... | ... | ... | ... | 6,694 4 0 |
| 12 | Garo Hills | ... | ... | 1 | 468 0 0 | 7 | 1,007 13 0 | ... | ... | ... | ... | ... | ... | 1,475 13 0 |
| 13 | Manipur State | ... | ... | 2 | 480 0 0 | 17 | 1,313 4 0 | ... | ... | ... | ... | ... | ... | 1,793 4 0 |
| 14 | Sadiya Frontier Tract | ... | ... | 1 | 606 0 0 | 6 | 597 7 0 | ... | ... | ... | ... | ... | ... | 1,203 7 0 |
| | Total of Districts ... | ... | ... | 41 | 19,291 8 0 | 463 | 57,692 0 3 | ... | ... | ... | ... | ... | ... | 76,983 8 3 |
| | Shillong Vaccine Depot | 1 | 600 0 0 | 1 | 2,580 0 0 | ... | 2,598 0 0 | ... | ... | ... | ... | ... | ... | 6,078 0 0 |
| | Total for the Province | 1 | 600 0 0 | 42 | 22,171 8 0 | 463 | 60,290 0 3 | ... | ... | ... | ... | ... | ... | 83,061 8 3 |

in the Province of Assam during the year 1930-31.

| ditto. | | | | Paid from— | | | | | | Number of all successful vaccinations and re-vaccinations. | Average cost of each successful case. |
|-----------------------|------------------|----------------------|-------------|----------------|------------------|-------------|-----------------|----------------|--------------|--|---------------------------------------|
| Travelling allowance. | Contingencies. | | Total cost. | Imperial Fund. | Provincial Fund. | Local Fund. | Municipalities. | Native States. | Total. | | |
| | Cost of Vaccine. | Other contingencies. | | | | | | | | | |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| Rs. s. p. | Rs. s. p. | Rs. s. p. | Rs. s. p. | Rs. s. p. | Rs. s. p. | Rs. s. p. | Rs. s. p. | Rs. s. p. | Rs. s. p. | | Rs. s. p. |
| 1,198 12 0 | ... | 318 7 9 | 7,007 6 9 | ... | 3,510 13 6 | 3,150 7 3 | 406 2 0 | ... | 7,007 6 9 | 19,418 | 0 5 10 |
| 3,552 12 0 | ... | 987 2 3 | 21,854 5 6 | ... | 7,913 15 6 | 12,870 7 0 | 1,009 15 0 | ... | 21,854 5 6 | 128,539 | 0 2 8 |
| 1,158 5 0 | ... | 19 0 0 | 4,244 2 0 | ... | 4,004 2 0 | ... | 240 0 0 | ... | 4,244 2 0 | 12,885 | 0 5 3 |
| 522 10 0 | ... | 49 14 6 | 2,205 6 6 | ... | 2,205 6 6 | ... | ... | ... | 2,205 6 6 | 5,132 | 0 6 10 |
| 465 0 0 | ... | 44 0 0 | 1,919 0 0 | ... | 1,919 0 0 | ... | ... | ... | 1,919 0 0 | 4,906 | 0 6 3 |
| 746 9 0 | ... | 374 8 0 | 10,707 3 0 | ... | 2,183 10 0 | 8,086 0 0 | 427 9 0 | ... | 10,707 3 0 | 51,368 | 0 3 4 |
| 1,399 0 0 | ... | 380 7 3 | 9,006 8 3 | ... | 2,945 15 9 | 6,747 8 6 | ... | ... | 9,006 8 3 | 49,825 | 0 3 1 |
| 1,293 14 0 | ... | 143 9 9 | 6,125 6 9 | ... | 2,450 9 0 | 3,358 6 0 | 316 7 9 | ... | 6,125 6 9 | 34,510 | 0 2 10 |
| 1,056 7 0 | ... | 101 1 6 | 5,909 10 6 | ... | 2,119 7 0 | 3,470 0 0 | 320 3 6 | ... | 5,909 10 6 | 28,873 | 0 3 3 |
| 2,348 8 0 | ... | 610 15 0 | 12,708 10 0 | ... | 4,445 7 6 | 7,295 15 6 | 1,027 3 0 | ... | 12,708 10 0 | 41,789 | 0 4 11 |
| 1,267 8 0 | ... | 12 13 0 | 7,974 9 0 | ... | 2,931 5 0 | 4,420 4 0 | 623 0 0 | ... | 7,974 9 0 | 25,511 | 0 5 0 |
| 578 10 0 | ... | 31 12 9 | 2,086 3 9 | ... | 2,086 3 9 | ... | ... | ... | 2,086 3 9 | 17,686 | 0 1 11 |
| 1,223 4 0 | 1,579 8 0 | 24 10 6 | 4,620 10 6 | ... | ... | ... | ... | 4,620 10 6 | 4,620 10 6 | 18,375 | 0 4 0 |
| 446 0 0 | ... | ... | 1,649 7 0 | 1,649 7 0 | ... | ... | ... | ... | 1,649 7 0 | 6,632 | 0 4 0 |
| 17,257 3 0 | 1,579 8 0 | 3,068 6 3 | 98,888 9 6 | 1,649 7 0 | 38,718 15 6 | 49,399 0 3 | 4,500 8 3 | 4,620 10 6 | 98,888 9 6 | 445,470 | 0 3 7 |
| ... | ... | 14,746 0 0 | 20,824 0 0 | ... | 20,824 0 0 | ... | ... | ... | 20,824 0 0 | ... | ... |
| 17,257 3 0 | 1,579 8 0 | 17,514 6 3 | 119,712 9 6 | 1,649 7 0 | 59,542 15 6 | 49,399 0 3 | 4,500 8 3 | 4,620 10 6 | 1,19,712 9 6 | 445,470 | 0 4 4 |

B.—DISPENSARY

Statement No. III.—Showing Dispensary Vaccination

| Districts. | Number of dispensaries in each district to which a vaccinator is attached. | Average number of vaccinators attached to dispensaries during the year. | Total number of persons vaccinated. | Average number of persons vaccinated by each vaccinator. | Primary vaccination. | | | | |
|-------------------------|--|---|-------------------------------------|--|----------------------|-----------------|-------------------------------|--------------------|----------|
| | | | | | Total. | Successful. | | | Unknown. |
| | | | | | | Under one year. | Over one and under six years. | Total of all ages. | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Cachar ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Sylhet ... | ... | ... | 1,088 | ... | 560 | 26 | 399 | 517 | 36 |
| Khasi and Jaintia Hills | ... | ... | 136 | ... | 118 | 25 | 53 | 82 | 26 |
| Naga Hills | ... | ... | 298 | ... | 161 | 24 | 122 | 146 | ... |
| Lushai „ | ... | ... | 174 | ... | 111 | 24 | 62 | 86 | 18 |
| Goalpara | ... | ... | 527 | ... | 45 | 7 | 26 | 44 | 1 |
| Kamrup | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Darrang | ... | ... | 562 | ... | 299 | 49 | 219 | 292 | 2 |
| Nowgong | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Sibsagar | ... | ... | 203 | ... | 27 | 1 | 19 | 22 | 1 |
| Lakhimpur | ... | ... | 196 | ... | 32 | 6 | 21 | 29 | 3 |
| Garo Hills | ... | ... | 1,822 | ... | 426 | 94 | 232 | 338 | 47 |
| Manipur State | ... | ... | 1,139 | ... | 639 | 128 | 393 | 571 | 40 |
| Sadiya Frontier Tract. | ... | ... | 495 | ... | 121 | 46 | 26 | 90 | ... |
| Total ... | ... | ... | 6,640 | ... | 2,539 | 480 | 1,572 | 2,217 | 174 |

Comparative Statement No. IV.—Showing the number of persons primarily vaccinated in each of the under

| Establishment. | Persons | | | | | | | |
|----------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|---------------------------------|
| | Total number. | Number successfully vaccinated. | Total number. | Number successfully vaccinated. | Total number. | Number successfully vaccinated. | Total number. | Number successfully vaccinated. |
| | Year ending | | | | | | | |
| | 1921-22. | | 1922-23. | | 1923-24. | | 1924-25. | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Government ... | 48,215 | 45,045 | 24,499 | 22,417 | 25,859 | 23,730 | 18,858 | 17,945 |
| Dispensaries ... | 597 | 495 | 756 | 660 | 1,363 | 1,163 | 1,457 | 1,250 |
| Municipal ... | 3,467 | 3,268 | 4,925 | 4,382 | 5,997 | 5,499 | 4,991 | 4,726 |
| Local Funds ... | 205,990 | 194,168 | 237,170 | 223,749 | 243,130 | 231,092 | 262,227 | 248,759 |
| Licensed vaccinators | ... | ... | ... | ... | ... | ... | ... | ... |
| Apprentices ... | 950 | 925 | 2,414 | 2,330 | 6,101 | 5,945 | 2,952 | 2,877 |
| Native States ... | 16,529 | 13,240 | 13,892 | 11,524 | 13,534 | 10,506 | 16,325 | 11,961 |
| Total ... | 275,748 | 257,131 | 283,656 | 265,052 | 295,984 | 277,935 | 306,810 | 287,518 |

VACCINATION.

in the Province of Assam during the year 1930-31.

| Re-vaccination. | | | Percentage of successful cases in which the results were known. | | Percentage of unknown cases to total cases. | |
|-----------------|-------------|----------|---|-----------------|---|-----------------|
| Total. | Successful. | Unknown. | Primary. | Re-vaccination. | Primary. | Re-vaccination. |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| ... | ... | ... | ... | ... | ... | ... |
| 528 | 197 | 168 | 98.66 | 54.92 | 6.43 | 31.82 |
| 18 | ... | 18 | 89.13 | ... | 22.03 | 100.00 |
| 137 | 47 | ... | 90.68 | 34.30 | ... | ... |
| 63 | 45 | 4 | 92.47 | 76.27 | 16.21 | 6.35 |
| 482 | 262 | 60 | 100.00 | 62.09 | 2.22 | 12.45 |
| ... | ... | ... | ... | ... | ... | ... |
| 263 | 203 | 11 | 98.32 | 80.55 | .67 | 4.18 |
| ... | ... | ... | ... | ... | ... | ... |
| 176 | 148 | 6 | 84.61 | 87.06 | 3.70 | 3.41 |
| 164 | 61 | 28 | 100.00 | 44.85 | 9.83 | 17.07 |
| 1,396 | 963 | 177 | 89.18 | 79.00 | 11.03 | 12.68 |
| 500 | 338 | 73 | 95.32 | 79.16 | 6.26 | 14.60 |
| 374 | 55 | ... | 74.38 | 14.71 | ... | ... |
| 4,101 | 2,319 | 545 | 93.74 | 65.21 | 6.85 | 13.29 |

and the number of those who were successfully vaccinated in the Province of Assam mentioned official years.

primarily vaccinated.

| Total number. | Number successfully vaccinated. | Total number. | Number successfully vaccinated. | Total number. | Number successfully vaccinated. | Total number. | Number successfully vaccinated. | Total number. | Number successfully vaccinated. | Total number. | Number successfully vaccinated. |
|---------------|---------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|---------------------------------|
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 29,979 | 27,812 | 34,589 | 27,786 | 65,524 | 59,339 | 50,560 | 44,570 | 36,803 | 32,086 | 38,520 | 33,363 |
| 2,353 | 1,987 | 2,212 | 1,801 | 5,980 | 5,171 | 5,662 | 4,503 | 2,851 | 2,231 | 2,539 | 2,217 |
| 4,881 | 4,624 | 5,009 | 4,787 | 5,881 | 5,443 | 7,231 | 6,744 | 4,935 | 4,645 | 4,752 | 4,521 |
| 268,846 | 256,726 | 301,565 | 286,393 | 312,404 | 291,569 | 288,661 | 270,267 | 260,658 | 238,776 | 250,393 | 230,321 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 733 | 700 | 900 | 885 | 1,092 | 1,059 | 713 | 657 | 1,132 | 962 | 1,145 | 1,078 |
| 18,089 | 15,370 | 16,972 | 14,655 | 18,304 | 15,995 | 19,366 | 14,258 | 18,240 | 16,171 | 17,403 | 15,203 |
| 324,881 | 307,219 | 361,247 | 336,407 | 409,185 | 378,579 | 372,193 | 340,989 | 324,619 | 294,871 | 314,752 | 286,693 |

31st March—

Statement No. V—Showing particulars of Vaccination verified by Inspecting Officers for the year 1930-31.

| District. | Total number of persons vaccinated. | | Total number inspected. | | | | Percentage of inspection to total number vaccinated. | | | | Percentage of successful cases to total number inspected. | | | | Percentage of successes reported by vaccinators. | |
|-----------------------------|-------------------------------------|-----------------|--|-----------------|---|-----------------|--|-----------------|---|-----------------|--|-----------------|---|-----------------|--|-----------------|
| | | | By Assistant Directors of Public Health or Civil Surgeons. | | By Native Superintendents or other Inspecting Officers. | | By Assistant Directors of Public Health or Civil Surgeons. | | By Native Superintendents or other Inspecting Officers. | | By Assistant Directors of Public Health or Civil Surgeons. | | By Native Superintendents or other Inspecting Officers. | | | |
| | Primary. | Re-vaccination. | Primary. | Re-vaccination. | Primary. | Re-vaccination. | Primary. | Re-vaccination. | Primary. | Re-vaccination. | Primary. | Re-vaccination. | Primary. | Re-vaccination. | Primary. | Re-vaccination. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| Cachar ... | 11,021 | 19,764 | 1,539 | 1,643 | 5,906 | 5,183 | 12.91 | 8.31 | 50.29 | 25.23 | 97.00 | 29.45 | 93.97 | 36.50 | 95.15 | 45.33 |
| Sylhet ... | 93,060 | 83,142 | 5,908 | 3,374 | 45,066 | 38,110 | 5.54 | 4.06 | 47.95 | 45.83 | 95.08 | 42.29 | 80.07 | 44.28 | 95.51 | 61.25 |
| Khasi and Jaintia Hills ... | 8,734 | 11,989 | 183 | 236 | 4,925 | 3,824 | 2.09 | 1.97 | 56.39 | 31.39 | 100.00 | 63.13 | 99.87 | 81.06 | 99.61 | 36.47 |
| Naga Hills ... | 6,507 | 787 | 308 | 223 | 2,509 | 178 | 4.73 | 28.33 | 33.94 | 22.62 | 83.11 | 83.40 | 74.33 | 50.00 | 83.42 | 51.30 |
| Lushai „ ... | 4,737 | 4,134 | 309 | 209 | 1,532 | 1,451 | 6.52 | 5.05 | 32.34 | 44.77 | 83.49 | 14.63 | 85.58 | 65.37 | 68.63 | 57.63 |
| Goalpara ... | 16,705 | 67,394 | 621 | 3,522 | 4,315 | 17,593 | 3.72 | 5.23 | 25.65 | 20.10 | 94.00 | 61.94 | 86.68 | 63.66 | 20.93 | 72.99 |
| Kamrup ... | 43,349 | 18,796 | 2,331 | 910 | 15,048 | 4,873 | 5.38 | 4.84 | 30.10 | 25.03 | 95.45 | 57.47 | 90.32 | 32.40 | 90.66 | 57.90 |
| Darrang ... | 17,738 | 30,408 | 2,363 | 4,002 | 3,947 | 6,783 | 12.78 | 13.16 | 22.25 | 22.31 | 95.15 | 60.06 | 89.54 | 65.53 | 94.83 | 70.67 |
| Nowgong ... | 23,514 | 6,848 | 3,004 | 224 | 18,405 | 3,228 | 11.77 | 8.27 | 72.14 | 47.14 | 97.65 | 39.31 | 97.91 | 59.53 | 97.19 | 59.35 |
| Sibsagar ... | 36,683 | 18,655 | 2,725 | 628 | 17,922 | 6,038 | 7.43 | 3.37 | 43.65 | 27.00 | 94.56 | 45.06 | 83.40 | 35.82 | 90.12 | 49.36 |
| Lakhimpur ... | 16,335 | 17,569 | 1,190 | 978 | 10,859 | 9,061 | 7.28 | 5.47 | 60.48 | 14.07 | 94.95 | 66.45 | 96.14 | 73.75 | 94.98 | 67.74 |
| Garo Hills ... | 8,718 | 16,399 | 1,220 | 1,556 | 1,498 | 2,677 | 13.99 | 9.07 | 16.36 | 16.32 | 86.47 | 59.52 | 77.35 | 66.64 | 88.99 | 75.34 |
| Manipur State ... | 18,042 | 5,308 | 2,165 | 394 | 8,379 | 900 | 12.00 | 7.42 | 29.81 | 17.90 | 94.91 | 85.02 | 96.44 | 56.94 | 95.34 | 76.71 |
| Sadiya Frontier Tract ... | 5,809 | 2,907 | 104 | 149 | 2,474 | 2,063 | 1.79 | 5.12 | 42.59 | 70.97 | 93.27 | 75.84 | 97.49 | 51.24 | 99.39 | 47.98 |
| Total ... | 314,752 | 304,400 | 23,175 | 18,978 | 137,523 | 102,612 | 7.06 | 5.93 | 43.03 | 33.61 | 93.26 | 55.94 | 90.21 | 53.91 | 94.05 | 62.54 |

Statement No. VI.—Showing the number of vaccinations performed in Municipal towns on children under one year of age during the year 1930-31.

| Districts. | Towns. | Number of births during the year. | Number of deaths amongst children under one year during the year. | Number of successful vaccinations on children under one year during the year ending 31st March 1931. | Date of extension of Vaccination Act to town. |
|-----------------------|--|-----------------------------------|---|--|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Cachar | Silchar ... | 212 | 18 | 50 | 21st January 1892. |
| | Hailakandi ... | 53 | 8 | 37 | 10th November 1922. |
| Sylhet | Sylhet ... | 549 | 104 | 256 | 1st October 1882. |
| | Habiganj ... | 178 | 34 | 117 | 11th December 1913. |
| | Sunamganj ... | 163 | 33 | 24 | 28th June 1915. |
| | Karimganj ... | 125 | 26 | 28 | 27th July 1915. |
| | Maulvi Bazar ... | 126 | 22 | 21 | 16th April 1916. |
| Khasi & Jaintia Hills | Shillong ... | 550 | 50 | 202 | 21st June 1895. |
| | Total of Surma Valley and Hill Division. | 1,966 | 295 | 735 | |
| Goalpara | Dhubri ... | 252 | 43 | 74 | 13th February 1891. |
| | Goalpara ... | 148 | 29 | 141 | 12th November 1890. |
| | Gauripur ... | 227 | 45 | 31 | 15th September 1922. |
| Kamrup | Gauhati ... | 486 | 64 | 328 | August 1852. |
| | Barpeta ... | 523 | 68 | 250 | 29th October 1915. |
| Darrang | Tezpur ... | 226 | 39 | 95 | 22nd May 1907. |
| | Mangaldai ... | 23 | 6 | 2 | 12th October 1906. |
| Nowgong | Nowgong ... | 320 | 55 | 216 | 7th April 1897. |
| Sibsagar | Sibsagar ... | 175 | 23 | 59 | 21st January 1892. |
| | Jorbat ... | 184 | 44 | 48 | 12th April 1892. |
| | Golaghat ... | 95 | 14 | 11 | 24th March 1892. |
| | Nazira ... | 112 | 14 | 32 | 1st December 1916. |
| Lakhimpur | Dibrugarh ... | 470 | 57 | 182 | September 1883. |
| | Doom Dooma ... | 19 | 1 | 1 | 21st October 1918. |
| | Tinsukia ... | 93 | 9 | 28 | 31st August 1922. |
| | Total of Assam Valley Division. | 3,353 | 511 | 1,498 | |
| | Total for the Province. | 5,319 | 806 | 2,233 | |

Statement No. VII.—Showing, side by side, the ratio (per 1,000 of population) of deaths

| District. | 1921-22. | | 1922-23. | | 1923-24. | | 1924-25. | |
|-----------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|
| | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Cachar ... | ·003 | 20,263 | ·04 | 21,557 | ·02 | 19,225 | ·01 | 19,613 |
| Sylhet ... | ·29 | 127,139 | ·009 | 116,561 | ·02 | 118,735 | ·02 | 122,817 |
| Khasi and Jaintia Hills ... | ·12 | 14,508 | ·008 | 9,885 | ... | 11,772 | ... | 11,145 |
| Naga Hills ... | ... | 4,748 | ... | 5,682 | ... | 5,626 | ... | 5,142 |
| Lushai „ ... | ... | 5,249 | ·01 | 3,247 | ... | 2,811 | ... | 4,316 |
| Goalpara ... | ·48 | 22,434 | 1·05 | 23,724 | ·29 | 26,738 | ·19 | 27,680 |
| Kamrup ... | ·27 | 17,383 | 1·13 | 29,711 | 1·33 | 34,481 | ·96 | 41,750 |
| Darrang ... | 2·38 | 13,036 | ·05 | 15,951 | ·62 | 17,013 | ·56 | 17,558 |
| Nowgong ... | ·40 | 14,522 | 3·12 | 14,907 | 2·72 | 15,205 | ·15 | 18,006 |
| Sibsagar ... | ·10 | 17,028 | ·04 | 21,816 | ·06 | 27,826 | ·26 | 23,748 |
| Lakhimpur ... | ·07 | 15,608 | ·09 | 16,052 | ·04 | 15,030 | ·02 | 16,576 |
| Garo Hills ... | ·02 | 6,312 | ·04 | 9,351 | ·02 | 7,183 | ... | 7,832 |
| Manipur State ... | ... | 16,214 | ... | 15,714 | ... | 12,540 | ... | 13,356 |
| Sadiya Frontier Tract ... | ... | 1,182 | ... | 1,056 | ... | 1,454 | ·02 | 1,133 |
| Total ... | ·35 | 295,626 | ·38 | 305,214 | ·40 | 315,639 | ·22 | 330,672 |

from small-pox and the number of successful vaccinations during the ten years ending 1930-31.

| 1925-26. | | 1926-27. | | 1927-28. | | 1928-29. | | 1929-30. | | 1930-31. | |
|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|
| Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| ·05 | 21,904 | ·01 | 24,769 | ·15 | 41,331 | 1·61 | 65,942 | ·32 | 30,687 | ·04 | 19,418 |
| ·06 | 139,006 | ·16 | 156,196 | 1·37 | 253,654 | 1·79 | 219,845 | ·15 | 145,407 | ·04 | 129,243 |
| ·004 | 13,547 | ·05 | 19,188 | ·28 | 63,020 | ·06 | 29,559 | ·03 | 13,574 | ... | 12,937 |
| ·006 | 4,859 | ... | 8,740 | ·006 | 8,845 | ... | 5,374 | ... | 5,845 | ... | 5,325 |
| ... | 5,329 | ... | 6,712 | ... | 9,588 | ... | 10,632 | ... | 11,771 | ... | 5,037 |
| ·30 | 31,517 | ·57 | 42,533 | 1·68 | 65,943 | 1·20 | 49,433 | ·26 | 55,246 | ·61 | 51,704 |
| ·69 | 39,986 | 1·32 | 48,991 | ·67 | 49,939 | ·37 | 49,392 | ·21 | 49,553 | ·29 | 49,825 |
| ·22 | 20,353 | ·36 | 21,387 | ·10 | 25,860 | ·10 | 26,664 | ·08 | 26,726 | ·15 | 35,005 |
| ·02 | 20,389 | ·01 | 23,095 | ·005 | 26,443 | ·06 | 26,871 | ·01 | 27,908 | ... | 28,873 |
| 2·99 | 40,821 | 3·40 | 61,006 | ·57 | 50,473 | ·06 | 37,525 | ·02 | 39,509 | ·03 | 41,950 |
| ·14 | 22,346 | ·38 | 24,436 | ·53 | 26,400 | ·15 | 20,639 | ·26 | 21,346 | ·27 | 25,601 |
| ·02 | 8,106 | ·50 | 23,994 | ·41 | 41,017 | ·35 | 22,531 | ·06 | 21,541 | ·13 | 18,997 |
| ... | 16,300 | ... | 15,598 | ... | 34,317 | ... | 41,077 | ... | 30,444 | ... | 19,284 |
| ·09 | 1,353 | ·05 | 2,197 | ... | 3,757 | ... | 4,793 | ... | 4,385 | ·02 | 6,777 |
| ·45 | 385,816 | ·65 | 478,842 | ·79 | 700,587 | ·86 | 610,277 | ·14 | 483,942 | ·14 | 450,006 |

GOVERNMENT OF ASSAM.

The Governor and the Minister of Local Self-Government.

Resolution on the Annual Public Health Report of the Province of Assam for the year 1930.

Extract from the Proceedings of the Governor of Assam and the Minister of Local Self-Government in the Medical Department, Public Health Branch, No. 2776M., dated the 28th October 1931.

READ—

The Public Health Report for the year 1930.

RESOLUTION.

THE Report furnishes evidence of continued success in improving the sanitary conditions of the province achieved by the Public Health Department, particularly in coping with epidemic disease. Assam can no longer be regarded as a specially unhealthy province; the birth-rate compares well with that in others, and the death-rate for the year under report is indeed lower than that of any save Burma. Making due allowance for the known defects of registration, there can be no doubt that decreasing mortality in the returns corresponds to a real growth of control, to which the success of the *kala azar* campaign, evidenced by a fall from 1,405 to 953 in recorded deaths, and from 23,804 to 16,430 in cases treated, must have largely contributed. Small-pox and cholera also show fewer deaths, demonstrating the growing popularity of preventive measures.

2. Malaria, however, remains a very ubiquitous and troublesome evil. As the deaths are included in those for fevers in general, including *kala azar*, which rose from 53,520 to nearly a lakh, it is not easy to estimate the rise or fall of the incidence of this disease; there are however indications that it can be as virulent as ever. It has re-appeared in parts of Shillong, and reports of prevalence in the Lushai Hills have been received. The fact that a need for action has attracted the attention of many authorities and that practical beginnings have been made in the attack on the problem is therefore a matter for satisfaction.

Surveys, mentioned by the Director, took place during 1930, and one of a thorough nature has been carried out at Kochugaon in the current year. The Assam Medical Research Society began operations in April 1931 with assistance from the Local Government amounting to Rs. 20,000, rendered possible by the decrease of expenditure on *kala azar*, and by a reduction in the contribution to the *Kala Azar* Commission, which unfortunately had to close down work in Assam owing to the lack of adequate material to demonstrate the course of transmission, from Rs. 15,000 to Rs. 7,500. The Indian Research Fund Association have also made the Society a grant of Rs. 15,000, the Indian Tea Association one which with subscriptions that are coming in from other commercial and private interests is estimated to reach Rs. 15,000.

It is to be hoped, with the Director, that the utmost co-operation between the various agencies working in the field of malaria, now including the Ross Institute, will be achieved. The Institute has set to work to apply upon the tea estates those

measures which were successfully practised in Cachar by Dr. G. O. Ramsay, the Director of the Assam Branch, and a member of the Governing Body of the aforementioned Society. It is generally recognised that research and investigation must precede active remedial operations, if economically practicable steps are to be taken against malaria, and that a wide field for such investigation remains in the varying conditions of this province. Though therefore financial difficulties stand in the way of any expensive anti-malarial campaigns, every item of evidence as to the value of the different methods of approach which are advocated by the schools of thought in this field has its immediate and ultimate usefulness.

It is intended to continue provincial surveys of the highly infective areas selected by the Director, such as certain mauzas in Goalpara the notoriety of which has been brought to notice by the Commissioner of the Assam Valley, and it will be important that the selection shall be such as to enable the results achieved to be co-ordinated with those of the Ross Institute and other agencies at work, so that the local Government can play the practical part in combating the disease which has been enjoined upon them by the Government of India and their medical advisers. This task of co-ordination will, it is hoped, be achieved by the Medical Research Society, which will share with the Public Health Department the area of investigation.

3. The desirability of strengthening the Department is recognised, but lack of funds has been a complete obstacle. The Retrenchment Committee recently appointed found it necessary, indeed, to propose amalgamation of the Department with the Medical, and a reduction in its superior staff. Government have come to the conclusion that such steps would be retrograde, and would endanger the successful completion of the programme for extirpating *kala azar*, any recrudescence of which might undo all the good that has so far been done. The importance also of a scientific campaign against malaria cannot be overemphasized.

The problems confronting the Department, largely arising from its lack of adequate man-power to act as a self-sufficient preventive agency, and consequent dependence upon co-operation from the Medical Department and local self-governing bodies, were discussed at a recent informal conference at Shillong. Until, however, money becomes available for the strengthening of the staff sufficient to render it efficient as a separate organisation, and to fulfil the measures which such an organisation must place in view, the time does not appear ripe for any re-organisation of the official and local self-governing agencies, or for the enactment of a Public Health Act. A beginning has however been made in the region of food adulteration, and a Pure Food Bill is now before the Legislative Council.

4. Government have reluctantly been compelled to dispense with the services of the Public Health Engineer, in view of the facts that support was not forthcoming for such an increase in the court-fee and stamp duties as would release funds for the inauguration and improvement of water-supply and drainage works, and that neither provincial nor local revenues are likely to be able to meet such requirements for a number of years. The two years during which he has been employed have however not been wasted. Much additional knowledge has been gained as to the conditions of municipal water-supply in the towns which have already piped systems, and as to the practicability of establishing such systems elsewhere. Considerable improvements in plant and method have been secured with his advice, as at Gauhati and Sylhet. Some progress has also been effected in the elaboration of schemes for water-supply at Dibrugarh, and drainage at Dibrugarh and Silchar, as well as other minor projects. His Excellency and his Minister with great regret part with Mr. Hillen, whose work they fully appreciate.

5. The thanks of Government are due to Lieutenant-Colonel Murison for his able administration of the Department, and for his interesting report.

ORDER :—Ordered that the Resolution be published in the *Assam Gazette* for general information.

By order of the Government of Assam,

H. G. DENNEHY,

*Offg. Secretary to the Government of Assam
in the Transferred Departments.*

